Operations Research Center

Massachusetts Institute of Technology

GRADUATE STUDENT DIRECTORY

November 2016

Jonathan Amar

Operations Research Center
Massachusetts Institute of Technology
77 Massachusetts Avenue, E40-103
Cambridge, MA 02139
Email: amarj@mit.edu

70 Pacific St, Apt 237B
Cambridge, MA 02139
857-891 2137

Education

Massachusetts Institute of Technology, Cambridge, MA
Candidate for PhD in Operations Research; expected completion, May 2022.
Advisor: Prof. Nikolaos Trichakis

Ecole Polytechnique, Palaiseau, France
SM in Applied Mathematics, Optimization and Data Science track, June 2016.
BS, major in Applied Mathematics and minor in Computer Science, June 2015.

Work Experience

2015 (Summer) **Insensi**, New York, NY
Development Intern
Created a dashboard to aggregate the large data generated by the Ily device.

Research Experience

2016–Present **Massachusetts Institute of Technology**, Cambridge, MA
Research Assistant
Advisor: Prof. Nikolaos Trichakis
Eliciting customer preferences through optimal questionnaires. Linear programming.

2016 (Mar - Aug) **Technion - Israel Institute of Technology**, Haifa, Israel
Research Intern, part of school curriculum
Supervisor: Aaron Bental and Tamir Hazan
Robust counterpart of Support Vector Machines with uncertain data. Use of probabilistic bounds PAC. Generalization error estimate. Understanding consistency and stability.

2015-2016 (Mar - Aug) **Shortouch**, Paris, France
Research Project
Most relevant path in a network of friends: learned how to quantify a friendship from Facebook data. Found shortest path in graph of people, where links represent closeness between individuals.

2015 (Apr - Jul) **CMAP Ecole Polytechnique**, Palaiseau, France
Research Project
Supervisor: Yacine Chitour
Estimating joint spectral radius and applications: analysis of commutation systems, using path-complete graph theory to estimate the stability of switched dynamical systems.
Numerical approach: confining the JSR of matrices characterizing the dynamical evolution.

2014-2015 **Polestar**, Toulouse, France
(Sep - May) *Research Project*
Learned human behavior in school cafeteria, through localization. Used path theory and Markov Chain proprieties to optimize the organization of cafeteria, therefore creating shortest paths.

Teaching Experience

2014-015 **Stanislas**, Paris, France
(Sep - Jun) *Teaching Assistant - Physics Instructor.*
Provided weekly training courses for undergraduate students in math and physics.

Publications

"Interval Data Classification with MuD Partial information - Geometric Interpretation of Robustness", with A. Bental and T. Hazan, and Co-Author, pending submission.

Honors and Awards

2016 Congratulations of the jury for best internship by Ecole Polytechnique
Related to the Internship at Technion

2016 Selected for Fulbright - Monahan Scholarship

2015 Finalist for PSC award by Ecole Polytechnique
Collective Scientific Project

Skills and Activities

Languages: French (native), English (native), Hebrew (European C1), Spanish (European C1).
Programming languages: Python, C++, Matlab and notions of R.
Web: Html.
Leadership: French Air Force, Military Instruction, 2013
Volunteering: Gawad Kalinga promoting social entrepreneurship in Cebu. S*ummer, 2014*

Citizenship Citizen of France and Canada

Ali Aouad

Operations Research Center
Massachusetts Institute of Technology
77 Massachusetts Avenue, E40-130
Cambridge, MA 02139

Phone: 857-389-4907
Email: aaouad@mit.edu
http://www.mit.edu/~aaouad

Education

Massachusetts Institute of Technology, Cambridge, MA
Candidate for PhD in Operations Research; expected completion, June 2017. GPA: 4.8/5.0
Operations Management track.
Advisors: Profs. Vivek Farias and Retsef Levi
Thesis: *Operations Management in Face of Choice Heterogeneity*

Ecole Polytechnique, Paris, France
Master of Science in Applied Mathematics, 2012 Financial Mathematics track. GPA: 4.0/4.0
Bachelor of Science, major in Applied Mathematics and minor in Economics, 2011.

Work Experience

2015-2016 **Slings and Arrows,** Paris, France
Co-founder of a start-up in financial analytics and quantitative investments
- Garnered seed funding from business angels.
- Commercialized a software solution with a $12M hedge fund.

2014 **InfoScout Inc,** San Francisco, CA
(June-Aug) *Data Science intern in startup in retail data analytics*
- Successfully prototyped a 'choice modeling' solution for InfoScout to offer its clients.
- Implemented unsupervised machine learning techniques for shopper segmentation, and designed algorithms to predict customer behaviors from explicit and implicit preference data.

2012-2013 **The Boston Consulting Group**, Paris, France
(Sep-Jan) *Visiting Associate*
- Contributed to the design of a macroeconomic reform in an emerging country, by redefining the subsidy scheme and competition policy, analyzed the feasibility of an agrarian reform.
- Advisory for industrial clients: inventory management, and manufacturing footprint strategy.

2012 **Nomura International Plc**, London, UK
(Spring-Sum.) *Quantitative Research Analyst (Intern) at the Structured Volatility Desk*
- Developed high frequency trading strategies calibrated based on the exposure to volatility.
- Used statistical models to predict the dynamics of volatility.

Research Experience

2013–Present **Massachusetts Institute of Technology**, Cambridge, MA
Research Assistant
Advisors & co-authors: Profs. Vivek Farias, Retsef Levi, Danny Segev, and Yaron Shaposhnik.

Teaching Experience

2016 **MIT Sloan School of Management**, Fellows MBA program, Cambridge, MA

(Summer) *Teaching assistant* for Operations Management - 15.778 - *Rating: 6.7/7.0.*
Core/elective course on the interplay between operations and strategy. Prepared teaching materials and taught weekly recitations to a class of 118 students. Provided guidance on the students' projects and graded the assignments for one section.

2016 **MIT Sloan School of Management**, MBA programs, Cambridge, MA
(IAP) *TA* for Risk Management - 15.S04 - *Rating: 6.33/7.0*
Elective course that discusses frameworks and methodologies for risk management. Advised students on their projects and held office hours (~30 students).

2015 **MIT Sloan School of Management**, Executive MBA program, Cambridge, MA
(Summer) *TA* for Introduction to Operations Management - 15.734 - *Rating: 6.11/7.0*
Core EMBA course on operations and revenue management. Taught weekly recitations, held office hours, ran a simulation game and graded the assignments (~60 students).

2014 **MIT Sloan School of Management**, Cambridge, MA
(Fall) *TA* for Intro to Healthcare Delivery: Market & System Challenges - 15.S75 - *Rating: 6.5/7.0* Course offered to ~35 students with diverse backgrounds (PhDs, MBAs) that discusses recent challenges and opportunities in the healthcare industry. Organized guest speakers' lectures, reviewed multiple case analyses, and coordinated the students' projects with partner institutions.

2010-2011 **Lycée Louis le Grand**, Paris, France
Examiner in Mathematics for undergraduate students preparing the competitive entrance exam to the "Grandes Ecoles" (French engineering schools)

Publications

Papers under Review

A. Aouad, V. Farias, and R. Levi, *Assortment Optimization Under Consider-then-Choose Choice Models,* Major revision in *Management Science* requested in June 2016.
Best Student Paper Award (2015) by the MIT Operations Research Center

A. Aouad, R. Levi, and D. Segev, *Approximation Algorithms for Dynamic Assortment Planning Models,* Major revision in *Mathematics of Operations Research* requested in June 2016.

A. Aouad and D. Segev, *Display Optimization for Vertically Differentiated Locations Under Multinomial Logit Preferences,* Major revision in *Management Science* requested in Oct 2016.

A. Aouad, R. Levi, and D. Segev, *Greedy-Like Algorithms for Dynamic Assortment Planning Under Multinomial Logit Preferences,* under review in *Operations Research.*
Finalist in the 2016 George Nicholson Prize competition

A. Aouad, V. Farias, R. Levi, and D. Segev, *The Approximability of Assortment Planning Under Ranking Preferences,* under review in *Operations Research.*

Working papers

A. Aouad, V. Farias and R. Levi, *Learning Individual Preferences: Collaborative Filtering with Price Signals,* Working paper.

A. Aouad and Y. Shaposhnik, *A Data-Driven Approach to Patient Scheduling in Ambulatory Procedural Units,* Working paper.

A. Aouad and D. Segev, *The Ordered Median Problem: Surrogate Models and Approximation Algorithms,* submitted to *Mathematics of Operations Research.*

Invited Presentations

Assortment Optimization Under Consider-then-Choose Choice Models
Young Researchers Workshop, "Data-Driven Decision-Making", Cornell ORIE, Fall 2016.
MIT ORC, Seminar Series, Spring 2016.
INFORMS Annual Meeting, 2014.
MSOM Conference, June 2014.
INFORMS Annual Meeting, 2013.

Approximation Algorithms for Dynamic Assortment Optimization Models
INFORMS Annual Meeting, 2015.

Greedy-Like Algorithms for Dynamic Assortment Planning Under Multinomial Logit Preferences
MIT Sloan, Operations Management Seminar Series, Fall 2016.
MSOM Conference, June 2016.

Display Optimization for Vertically Differentiated Products Under Multinomial Logit Preferences
MSOM Conference, June 2016.

Honors and Awards

2015 Best student paper awarded by the Operations Research Center (MIT)
Assortment Optimization Under Consider-then-Choose Choice Models

2007-2012 Scholarship of Excellence (Major-AEFE)
Granted by French Government to foreign students (top 1%) to pursue their studies in France.

2007 4th Prize of "Concours General des Lycees" (French nationwide competition)
Awarded the 4th prize of Mathematics, in the national competition of French senior High School.

Skills and Activities

*Programing***:** Python, Julia, Matlab, Notions in C++ and R.
Languages: French (native), Arabic (native), English (full pro. proficiency).
Professional service:

- Reviewer for Management Science and Operations Research
- Co-organizer of the MIT ORC Fall Seminar Series (2015)
- Vice-President of a student organization in Paris, *AMGE-Caravane* (2009-2010).

Extracurricular activities: drawing, boxing, and theater

Citizenship Citizen of France and Morocco

Lennart Baardman

Operations Research Center
Massachusetts Institute of Technology
77 Massachusetts Avenue, E40-130
Cambridge, MA 02139

70 Pacific Street
Cambridge, MA 02139
617-417-7461
Email: baardman@mit.edu
URL: http://www.mit.edu/~baardman/

Education

Massachusetts Institute of Technology, Cambridge, MA
Candidate for PhD in Operations Research; expected completion, June 2018.
Advisor: Prof. Georgia Perakis

University of Cambridge, Cambridge, United Kingdom
MASt in Mathematics**,** June 2014.
Essay title: *Applicable Combinatorial Auctions*

University of Groningen, Groningen, Netherlands
BSc in Econometrics and Operations Research**,** July 2013.
Summa cum laude
Thesis title: *Multiple Traveling Salesman Problem with equal visits: An application to AS/RS scheduling*
Advisor: Prof. Kees Jan Roodbergen

Work Experience

2013 (Summer)
ABN AMRO Commercial Finance N.V., 's Hertogenbosch, Netherlands
Data Scientist
Worked as the designer within the Business Intelligence project. The goal was to use the data available to ABN AMRO Commercial Finance to identify new business opportunities. Wrote an R program generating statistical reports to enhance customer service.

Research Experience

2014–Present
Massachusetts Institute of Technology, Cambridge, MA
Research Assistant
Advisor: Prof. Georgia Perakis
Conducting research into developing new optimization models for revenue management and pricing in the retail industry. Developed a model to increase profits for retailers by improving their promotion vehicle schedules using near-optimal algorithms. Investigated how supply chains are affected by vendor funds or trade deals. Constructed an algorithm that allows retailers to optimally select vendor funds.

2012-2013
University of Groningen, Groningen, Netherlands
Research Assistant
Advisor: Prof. Kees Jan Roodbergen
Conducted research on scheduling end-of-aisle picking systems, such as automated storage and retrieval systems (AS/RS). Proved a link between scheduling these systems and a special type of Multiple Traveling Salesman Problem. Designed a meta-heuristic to solve the problem to near-optimality.

Teaching Experience

2016 **Massachusetts Institute of Technology**, Cambridge, MA
Teaching Assistant for Data, Models, and Decisions – Executive MBA
Duties: teaching recitations, assisting students, making and grading homework and exams.

2011-2013 **University of Groningen,** Groningen, Netherlands
Teaching Assistant for courses in BSc Econometrics and Operations Research
Courses: Mathematics I for EOR, Mathematics II for EOR, Multivariate Analysis, Sampling and Estimation, Hypothesis Testing, and Estimation and Testing.
Duties: teaching tutorials, assisting students, making and grading assignments and exams.

Publications

"A Special Case of the Multiple Traveling Salesman Problem in End-of-aisle Picking Systems", with K.J. Roodbergen, and H.J. Carlo, submitted, third round of review.

"*Scheduling Promotion Vehicles to Boost Profits"*, with M.C. Cohen, K. Panchamgam, G. Perakis, and D. Segev, submitted. Available at http://ssrn.com/abstract=2638396.

"The Role of Vendor Funds in Promotion Planning", with G. Perakis, working paper.

Presentations

"*Scheduling Promotion Vehicles to Boost Profits"*, with M.C. Cohen, K. Panchamgam, G. Perakis, and D. Segev, presented at ISMP 2015, INFORMS 2015, POMS 2016, RMP 2016, MSOM 2016.

"The Role of Vendor Funds in Promotion Planning", with G. Perakis, presenting at INFORMS 2016.

Honors and Awards

2016 Finalist for the Service Science Cluster Best Paper Award
2016 Finalist for the Facebook Fellowship
2015 Finalist for the INFORMS Revenue Management and Pricing Practice Award
2013 GUF-100 Prize of the Groningen University Fund
2011-2013 Member of the Honours College of the University of Groningen

Skills and Activities

Languages: Dutch (native), English (fluent), German (intermediate), Spanish (intermediate), French (basic)
Programming Languages: Delphi, HTML/CSS, Java, Julia, JuMP, LaTeX, MATLAB, Oracle SQL, Python, R
Software: AIMMS, Eviews, Microsoft Office, PlantSimulation, SPSS, Stata
ORC Seminar Coordinator, Fall 2016

Citizenship Citizen of the Netherlands

Lauren Berk

Operations Research Center
Massachusetts Institute of Technology
77 Massachusetts Avenue, E40
Cambridge, MA 02139
Email: lberk@mit.edu

23 Sidney St. Apt. 211
Cambridge, MA 02139
908-947-8144

Education

Massachusetts Institute of Technology, Cambridge, MA
Candidate for PhD in Operations Research; expected completion, May 2019. GPA: 5.0
Advisor: Dimitris Bertsimas

Yale University, New Haven, CT
BS in Intensive Mathematics, Summa Cum Laude, May 2012. GPA 3.95.

Work Experience

2012-2014 **Analytics Operations Engineering Inc.**, Boston, MA
Analyst
Built a circulation optimizing and forecasting tool for the marketing team of a major retailer. Trained the client in the tool and the math necessary to use it, and assisted in the tool's integration. Mined call center and repair data for a cell phone manufacturer to explain and mitigate abnormally high costs.

2011 **Susquehanna International Group**, Bala Cynwyd, PA
(Summer) *Assistant Trader Intern*
Researched the time decay of market straddle prices in Matlab and developed a corresponding trading strategy. Wrote and refined existing trading and analysis algorithms as part of the automated trading group

2010 **Princeton Plasma Physics Lab**, Princeton, NJ
(Summer) *Summer Undergraduate Laboratory Internship*
Studied high harmonic fast wave heating on the National Spherical Torus Experiment Calculated heating efficiencies and spacial deposition profiles and correlated these to other parameters Wrote for the Department of Energy Undergraduate Journal, selected for an American Physical Society conference.

2009 **National Security Agency**, Ft. Meade, MD
(Summer) *Analyst*
Analyzed large data sets using language modeling, probability analysis, and statistical algorithms. Produced a final product in Java with an intern team and co-authored a classified technical paper on our work. TS/Sensitive Compartmentalized Information/Special Intelligence.

Research Experience

2014–Present **Massachusetts Institute of Technology**, Cambridge, MA
Research Assistant
Advisor: Dimitris Bertsimas

Studied applications of modern optimization to problems in statistics, including Sparse Principal Component Analysis. Assisted a consulting firm in Boston to forecast projects and revenue, and make more profitable hiring decisions.

Teaching Experience

2015 (Fall) **Massachusetts Institute of Technology**, Cambridge, MA
Teaching Assistant for Introduction to Mathematical Programming and 15.081
Wrote and led recitations, graded problem sets and exams, worked with the professor to develop assignments, provided office hours and assistance to students over email.

2010-2011 **Yale University**, New Haven, CT
Course Grader for Real Analysis and for Measure Theory
Graded homework sets for undergraduate courses.

Skills and Activities

Languages: French (conversational), Mandarin (beginning)
Programming: Julia, Java, R, SQL, VBA, IDL, C, Matlab, Mathematica, Gurobi, CPLEX, LATEX
Deacon at Old South Church

Citizenship Citizen of United States of America

Maximilien Burq

Operations Research Center
Massachusetts Institute of Technology
77 Massachusetts Avenue
Cambridge, MA 02139
Email: mburq@mit.edu

238 Prospect St
Cambridge, 02139
617-595-2722

Education

Massachusetts Institute of Technology, Cambridge, MA
Candidate for PhD in Operations Research; expected completion, June 2018. GPA: 5.0
Thesis: *Matching in Dynamic Markets*
Advisor: Prof. Patrick Jaillet (MIT ORC), Prof. Itai Ashlagi (Stanford MS&E)

École Polytechnique, Palaiseau, France
Ms in Applied Mathematics, June 2014.
Multidisciplinary curriculum in Mathematics, Economy, Biology and Computer Science, followed by a specialization in Optimization, Probability and Statistics. Ranked 1st out of 13000 on the national entrance exam.

Lycée Blaise Pascal, Orsay, France
Sept 2009, June 2011.
Intensive preparation in Mathematics, Physics and Computer Science for the highly competitive national competitive entrance exams to the French Grandes Écoles.

Work Experience

2015 **Talentoday**, San Francisco, CA
Chief Data Scientist
Developped candidate recommendation algorithm based on individual personality and motivation traits. Hired and managed a team of 2 full-time Data Scientists to incorporate psychometrics and third-party data in the algorithm.

2014 (Part-time) **CardioV Labs**, Paris, France
Consultant
Conducted market physician interviews.

2013 (Summer) **Alstom Nuclear**, Wuhan, China
Quality Management Assistant
Developped automated reporting and analysis tools for the Quality Management Systems division.

2011 (Fall - Winter) **Paris Firefighter Brigade**, Paris, France
EMT
In charge of a three-man first aid and rescue vehicle. Led 1000+ missions over 6 months. Had to make complex life-saving decisions under high pressure.

Research Experience

2014–Present **Massachusetts Institute of Technology**, Cambridge, MA

Research Assistant
Advisor: Profs. Patrick Jaillet and Itai Ashlagi
I am working on designing efficient algorithms and policies for dynamic matching markets, with applications to organ allocation systems (in particular matching living kidney donors to patients) and ride-sharing markets (in collaboration with French start-up BlaBlaCar which offers long distance ride-sharing service). I am interested in Market Design, Optimization under uncertainty and Dynamic Decision-making.

2013 **École Polytechnique**, Palaiseau, France
Research Assistant
Supervisor: Stephane Gaubert, Xavier Allamigeon
Designed algorithms to minimize the travels and carbon emissions linked to amateur sports competitions. Applied Linear and Semi-Definite Programming methods solve a variant of the maximum-k-cut problem.

2012-2013 **École Polytechnique**, Palaiseau, France
Student
Supervisor: Stephanie Allassonnière
ECG-based prediction of defibrillator efficiency through non-parametric statistical learning algorithms.

Teaching Experience

2012 **École Polytechnique**, Palaiseau, France
(Semester) *Teaching Assistant* for classes préparatoires in Mathematics
Description of your TA duties.

Publications

"On Matching and Thickness in Heterogeneous Dynamic Matching Markets", with Patrick Jaillet, Itai Ashlagi, and Vahideh Manshadi, submitted to Operations Research, April, 2016.

"Dynamics of Kidney Exchange", with Vahideh Manshadi, Itai Ashlagi, and Patrick Jaillet, submitted to forthcoming.

Skills and Activities

Languages: English, French
Programming: Python, Julia, R, Java
Optimization/Machine Learning: Gurobi, JuMP, Mosek, Tensor Flow
President, INFORMS society at MIT, 2015
President, GEPPM 2011-2014 (Association promoting higher education for minorities).

Citizenship Citizen of France

Eduardo Candela

Operations Research Center
Massachusetts Institute of Technology
77 Massachusetts Avenue, E40-130
Cambridge, MA 02139
Email: ecandela@mit.edu

155 Prospect St. Apt. 3
Cambridge, MA 02139
617-955-3631

Education

Massachusetts Institute of Technology, Cambridge, MA
Candidate for PhD in Operations Research; expected completion, June 2020.
Advisor: Prof. David Simchi-Levi

Instituto Tencológico Autónomo de México (ITAM), Mexico City, Mexico
BS in Industrial Engineering, Summa Cum Laude, July 2015.
Thesis title: *Modeling and optimization of a private vehicle rental business in an airport using computer simulation*

Instituto Tencológico Autónomo de México (ITAM), Mexico City, Mexico
BS in Mechatronics Engineering, Summa Cum Laude, July 2015.

Work Experience

2015 (Jan-Jul)
Maak Holding, Mexico City, Mexico
Continual Process Improvement Coordinator
Analysis, mapping and diagnostics of the entire supply chain. Demand forecasts and reorder points estimation. Design, implementation and management of process improvements that increased overall profitability and reduced cycle times and costs.

2013 (Jun-Aug)
AISECE, Rseszów, Poland.
Mexico Cultural Ambassador.
Social internship that consisted of teaching English and Spanish to kindergarten children in 6 different cities in Poland. Won the Best Country Presentation Award.

Research Experience

2015–Present
Massachusetts Institute of Technology, Cambridge, MA
Research Assistant
Advisor: Prof. David Simchi-Levi.
Theory development and implementation of supply chain management and revenue management solutions to real industry problems .

2012-2015
Intituto Tecnológico Autónomo de México, Mexico City, Mexico.
Research Assistant
Supervisor: Andrés Gómez de Silva Garza.
Analysis and optimization of stochastic and agent-based models using Artificial Intelligence. Decision trees generation applied to public policy. Data structures optimization.

Teaching Experience

2013-14 (Fall & Spring) **Instituto Tecnológico Autónomo de México (ITAM)**, Mexico City, Mexico.
Teaching Assistant for Modeling and Optimization II.
Teaching recitations on using MATLAB to modeling and optimization, homework grading, office hours and tutoring.

Publications

"Decision Theory: Science applied to taking better decisions.", submitted to HolaMundo, August, 2014.

"Cross-national Determinants of Homicide", with Gutiérrez-García, Gómez de Silva Garza, and Patiño, submitted to Analyses of Social Issues and Public Policy, May, 2015.

Honors and Awards

2010 Bailleres Scholarship
Given to the best student at ITAM of each program, covering 100% of tuitions during the entire career.

2010 Mancera Scholarship
A monthly stipend granted by ITAM through the entire career.

2012 Telmex Scholarship
A monthly stipend granted by Telmex through the entire career.

2008 Champion of the Mexican Informatics Olympiad

2014 Best Animation and finalist of the first worldwide 2014 Simio Simulation Contest.

Skills and Activities

Leadership.
Project and team management.
Data analysis for business optimization.
President of the Industrial and Mechatronics Engineering Student Organization, 2013.
Vice President of the 764 Chapter of the Institute of Industrial Engineers, 2012.

Citizenship Citizen of Spain and Mexico.

Chongli Daniel Chen

Operations Research Center
Massachusetts Institute of Technology
77 Massachusetts Avenue, E40-112
Cambridge, MA 02139

781-363-7105
dcchen@mit.edu
mit.edu/~dcchen/

Education

Massachusetts Institute of Technology, Cambridge, MA
Candidate for PhD in Operations Research; expected completion, June 2018. GPA: 5.0
Advisors: Profs. Retsef Levi and Georgia Perakis

University of Cambridge, Cambridge, UK
BA in Mathematics, June 2012.

Work and Research Experience

2013–Present **Massachusetts Institute of Technology**, Cambridge, MA
Research Assistant
Advisors: Profs. Retsef Levi and Georgia Perakis
Currently working on a batch scheduling problem with submodular cost functions, and exploring applications to a warehouse picking problem with an online retailer. Also writing a paper on a robust version of the data driven newsvendor problem for mixture distributions. More generally, interested in optimization techniques for real world applications.

2015 **Amazon**, Seattle, WA
Operations Research Scientist Intern
Manager: Felix Cheng
Developed a model to attribute changes in inventory turnover rate based on historical data during a three-month internship.

2012–2013 **Institute for Infocomm Research**, Singapore
Research Engineer
Supervisor: Dr. Tony Q. S. Quek
Worked on two projects, using stochastic geometry to model heterogeneous networks in cyber-physical systems, and using neural network techniques to deal with missing data in sensor networks.

2008 **Institute for Infocomm Research**, Singapore
Research Intern
Supervisor: Dr. Lekha Chaisorn
Developed a robust algorithm for video signature generation and video matching during a three-month internship.

Teaching Experience

2008 **Singapore International Mathematical Olympiad Team**, Singapore
Trainer and Observer
Trained the national team in preparation for the International Mathematical Olympiad.

2008 **River Valley High School**, Singapore
Trainer
Trained high school students in preparation for the Singapore Mathematical Olympiad.

2008 **Raffles Girls' School (Secondary)**, Singapore
Trainer
Trained high school students in preparation for the Singapore Mathematical Olympiad.

Publications

"Submodular batch scheduling", with R. Levi and G. Perakis, working paper, 2016.

"Robustly minimizing a piecewise-linear cost function with respect to uncertainty in mixed demand", with R. Levi and G. Perakis, working paper, 2016.

"An estimation and optimization framework for capturing interdependencies in choice modeling", with M. Copenhaver, submitted, 2016.

"A unified perspective on random serial dictatorship and the Boston mechanism", with M. Copenhaver, working paper, 2016.

"Backhauling in heterogeneous cellular networks: Modeling and tradeoffs", with T. Q. S. Quek and M. Kountouris, IEEE Transactions on Wireless Communications, 2015.

"Imputing missing values in sensor networks using sparse data representations", with L. Z. Wong, H. Chen and S. Lin, 17th ACM International Conference on Modeling, Analysis and Simulation of Wireless and Mobile Systems, Montreal, Canada, Sep 2014.

"Wireless backhaul in small cell networks: Modelling and analysis", with T. Q. S. Quek and M. Kountouris, in Proc. IEEE Vehicular Technology Conference Spring, Seoul, Korea, May 2014.

"Ordinal-based method for robust image/video signature generation", with L. Chaisorn and S. Rahardja, in Proc. SPIE Optics and Photonics, 2008.

Honors and Awards

2008–Present National Science Scholarship from the Agency for Science, Technology and Research, Singapore
Full scholarship for undergraduate and graduate studies.
2010 College Scholarship and College Prize, Pembroke College, University of Cambridge, UK
2008 Cambridge Commonwealth Trust Honorary Scholarship
2004/2005 Silver (2005) and Bronze (2004) Medals at the International Mathematical Olympiad
2004 Lee Kuan Yew Award for Mathematics and Science

Skills and Activities

*Languages***:** English, Mandarin
Programming: Python, MATLAB, R, Gurobi, limited experience with SQL
Leadership: Secretary, Cambridge Chinese Christian Fellowship (2010), President, Hwa Chong Institution Mathematics Appreciation Club (2005).

Citizenship Citizen of Singapore

Martin S. Copenhaver

Operations Research Center
Massachusetts Institute of Technology
77 Massachusetts Avenue, E40-130
Cambridge, MA 02139

Email: mcopen at mit dot edu
Web: www.mit.edu/~mcopen

Education

Massachusetts Institute of Technology, Cambridge, MA
Candidate for Ph.D. in Operations Research; expected completion: June 2018.
Advisor: Prof. Dimitris Bertsimas

Georgia Institute of Technology, Atlanta, GA
B.S. Applied Mathematics, with Highest Honors, May 2013.

Work Experience

2016 Summer — **Massachusetts General Hospital**, Boston, MA
Operations Research Intern

2013-Present — **Massachusetts Institute of Technology**, Cambridge, MA
Research and Teaching Assistant

2013 Summer — **Central Michigan University**, Mt. Pleasant, MI
Graduate Student Mentor

2012-2013 — **Georgia Tech High School Math Competition**, Atlanta, GA
Chair

Relevant Skills

Computing: Python, R, SQL, Julia, Mathematica, MATLAB, Gurobi/CPLEX/Mosek, HTML
Coursework: optimization (linear, integer, under uncertainty); operations management and mechanism design; statistical learning theory; data analytics; behavioral economics; choice modeling and assortment optimization; healthcare delivery.
Human languages: English (native), French (conversational)

Selected Publications

"An estimation and optimization framework for capturing interdependencies in choice modeling", with D. Chen. Under review.

"Certifiably optimal low rank factor analysis", with D. Bertsimas and R. Mazumder. Under review.

"On structural decompositions of finite frames", with A. Chan, S.K. Narayan, L. Stokols, and A. Theobold. Advances in Computational Mathematics 42(3) (2016), 721-756.

"Tight frame scaling in finite dimensions", with Y. Kim, C. Logan, K. Mayfield, S. Narayan, M. Petro, and J. Sheperd. Operators and Matrices 8(1) (2014), 73-88.

"Orphan works and the global interplay of democracy, copyright, and access", Legal Issues in Global Contexts, eds. St.Amant and Rife (2014). [Book chapter]

Honors and Awards

2013	National Defense Science and Engineering Graduate (NDSEG) Fellowship recipient
2013	National Science Foundation Graduate Research Fellowship recipient
2012	Pennsylvania State University MASS Merit Fellowship
2012	Wartell-Brossette Award for Multidisciplinary Studies in Biology, Physics, and Math (Georgia Tech College of Sciences)

Citizenship Citizen of United States of America

Antoine Dedieu

Operations Research Center
Massachusetts Institute of Technology
77 Massachusetts Avenue, E40-130
Cambridge, MA 02139
Email: adedieu@mit.edu

70 Pacific Street #237A
Cambridge, MA 02139
857-316-9411

Education

Massachusetts Institute of Technology, Cambridge, MA
Candidate for SM on Operations Research; expected completion, June 2018.
Advisor: Rahul Mazumder

Ecole Polytechnique, France
SM in Applied Mathematics, Probability, Optimization and Statistics track, August 2016.
BS, major in Applied Mathematics and minor in Economics, GPA: 3,96/4, August 2015.

Lycée Sainte-Geneviève, Versailles, France
Intensive two-year preparation program leading to the competitive entrance examinations to the French Grandes Ecoles for scientific studies. Maths, CS and Physics track. GPA: 3,98/4.

Work Experience

2016 (Mar-Jul)
Société Générale Corporate and Investment Banking, Paris, France
Equity Derivative Structurer

- Led a 5 months Machine Learning research project in Finance.
- Developed a fast pricing tool for complex structured products -autocalls-.
- Simulated a 1M dataset over more than 1000 underlyings by selecting suitable financial parameters.
- Built a model achieving a 0,25% error MAE compared to market prices.
- Proved statistical properties of the error distribution to improve the robustness of the model.

2015 (Jun-Aug)
Option, Santiago, Chile
Web Developer

- Developed a form builder and management tool for a social network project.
- Learned to manage with agility an IT project.

2013-2014 (Oct-Apr)
Jiao Tong university, Shanghai, China
Teacher assistant and examiner

- Mentored top Chinese undergraduate students enrolled in a French Preparatory program.
- Initiative, communication and adaptation skills required in a bicultural environment.

Research Experience

2016–Present
Massachusetts Institute of Technology, Cambridge, MA
Research Assistant
Advisor: Rahul Mazumder

Using Optimization methods to design new Machine Learning algorithms.

2015–2016 **Air France**, Paris, France
Revenue Management project
Modeled the worldwide flights of the company to improve flight management.

2015 **Ecole Polytechnique**, Department of Applied Mathematics, France
(Fall) *Finance Research project*
Develop with a partner a statistical approach and an algorithm to detect inside trading.

Honors and Awards

2010 National Olympiad
First regional award in Mathematics

Skills and Activities

Languages: French (native), English (fluent), Spanish (fluent), Chinese (notions)
Computing: Python, Java, C++, Html, Caml, Symfony, AngularJS
Travel: China, Russia, Canada, Indonesia, Bolivia, Peru, Iceland, Eastern and Southern Europe.
Campus Life: Organized a sport section journey to Sri Lanka, and a tennis championship.
Treasurer of the Ecole polytechnique movie club. In charge of the students' ticket office.
Volunteering: Private tutoring in disadvantaged areas with Secours Catholique for one year.
Volunteer with CheerUp, a student association aimed at visiting teenage cancer patients.

Citizenship Citizen of France

Arthur Delarue

Operations Research Center
Massachusetts Institute of Technology
77 Massachusetts Avenue, E40-103
Cambridge, MA 02139
Email: adelarue@mit.edu

111 Webster Ave #2
Cambridge, MA 02141
617-467-8954

Education

Massachusetts Institute of Technology, Cambridge, MA
Candidate for PhD in Operations Research; expected completion, June 2020.
Advisor: Prof. Dimitris Bertsimas

Massachusetts Institute of Technology, Cambridge, MA
B.S. in Physics and Mathematics, June 2016.

Work Experience

2015 (Winter) **Jane Street Capital**, New York, NY
Trading Intern
Analyzed arbitrage and risk hedging strategies and searched for new trading opportunities.

Research Experience

2016–Present **Massachusetts Institute of Technology**, Cambridge, MA
Research Assistant
Advisor: Prof. Dimitris Bertsimas
Studying the interplay between optimization, statistics and data.

2015-2016 **Massachusetts Institute of Technology (Operations Research Center)**, Cambridge, MA
Undergraduate Research Assistant
Supervisors: Profs. Dimitris Bertsimas and Patrick Jaillet
Developed real-world optimization methods to determine the cost function of a graph from observed equilibria.

2014 **ETH Institute for Particle Physics**, Zurich, Switzerland
Summer Research Assistant
Supervisor: Prof. Gunther Dissertori
Implemented modern jet reconstruction techniques to identify boosted top quarks at the LHC.

2013-2015 **Massachusetts Institute of Technology (Kavli Institute for Astrophysics)**, Cambridge, MA
Undergraduate Research Assistant
Supervisor: Prof. Saul Rappaport
Analyzed data from the NASA Kepler mission, which aims to detect extrasolar planets and binary stars by looking for tiny dips in the brightness of a source when a planet (or companion star) passes in front of it.

2013-2013 **Center for Free-Electron Laser Science**, Hamburg, Germany
Summer Research Assistant
Supervisor: Henry Chapman

Optimized the delivery of biological samples into a vacuum chamber to be imaged with high-energy X-rays.

Publications

"Traffic Estimation in the Age of Big Data", with D. Bertsimas, P. Jaillet, and S. Martin, pending submission to OR, November, 2016.

Honors and Awards

2016 (Fall/Spring) William Asbjornsen Albert Memorial Fellowship
Granted by the MIT Office of the Dean for Graduate Education

2016 Phi Beta Kappa
Academic Honor Society

2016 Sigma Pi Sigma
Physics Honor Society

2014 (Summer) Zeno Karl Schindler Foundation Engineering and Environmental Sciences Grant
Awarded to conduct research in particle physics at ETH Zurich.

2011 3rd prize in Concours General des Lycees (Latin)
French nationwide competition for high school juniors.

Skills and Activities

Languages: French (native), English (native), German (Intermediate), Spanish (Intermediate)
Programming: Python, Julia, NI LabVIEW, Notions in C++ and Mathematica
Extracurricular activities: skiing, hiking.
President of MacGregor House (Undergraduate Residence), 2015
MIT Lightweight Men's Crew Team (NCAA Division I), 2012-2013

Citizenship Citizen of the United States of America and France

Jack Dunn

Operations Research Center
Massachusetts Institute of Technology
77 Massachusetts Avenue, E40-130
Cambridge, MA 02139
Email: jackdunn@mit.edu

24 Hardwick St, Unit 1
Cambridge, MA 02141
857-260-8119

Education

Massachusetts Institute of Technology, Cambridge, MA
Candidate for PhD in Operations Research; expected completion, June 2018. GPA: 5.0/5.0
Advisor: Prof. Dimitris Bertsimas

University of Auckland, New Zealand
Bachelor of Engineering with First Class Honours, May 2014. GPA: 9.000/9.000
Thesis title: *Binary Interruptible Load Optimization*

Work Experience

2013-2014 (Summer)
Google, Sydney, Australia
Software Engineering Intern, Related Entities
Worked to improve the quality of the algorithms behind the Related Entities recommendation service within the Google Knowledge Graph. Designed a system to collect crowd-sourced human evaluation data from a pool of distributed workers and aggregate this via MapReduce. Created an optimization model using collected data to tune the parameters in the Related Entities engine.

2012-2013 (Summer)
Google, Sydney, Australia
Software Engineering Intern, Network Software
Worked with the Network Software team to develop an extensible network visualization framework for internal use. Implemented services to carry out aggregation of large-scale real-time data relating to the Google network. Developed layout algorithms for determining the optimal arrangement for network topologies on screen under different contexts.

2011-2012 (Summer)
Derceto, Auckland, New Zealand
Optimization Assistant
Assisted Operations Team with delivering Derceto Aquadapt optimization software to clients. Developed simulation of water distribution network in MATLAB to evaluate the effects of proposed changes to control scheme. Implemented a database query tool to aid clients in data analysis, and led deployment of new company-wide intranet.

Research Experience

2014–Present
Massachusetts Institute of Technology, Cambridge, MA
Research Assistant
Advisor: Prof. Dimitris Bertsimas
Development of globally-optimal decision tree methods for classification and regression based on modern optimization techniques (mixed-integer and robust optimization) that significantly outperform state-of-the-art tree-based machine learning methods such as CART, Random Forests and Gradient Boosting.

2013-2014 **University of Auckland**, Department of Engineering Science, Auckland, New Zealand
Research Assistant
Supervisor: Dr. Golbon Zakeri
Research project for Transpower New Zealand to resolve an issue with procuring reserve generation in the New Zealand electricity market. Conducted in-depth analysis of mixed-integer optimization duality theory in the context of market pricing.

Teaching Experience

2015 **Massachusetts Institute of Technology**, Cambridge, MA
(Fall) *Teaching Assistant* for Introduction to Mathematical Programming (6.251J/15.081J)
Core PhD course for MIT Operations Research Center students.

2013-2014 **University of Auckland**, Department of Engineering Science, Auckland, New Zealand
Teaching Assistant for multiple courses on mathematical modeling and computational techniques.

Publications and Talks

"Optimal Classification Trees" with D. Bertsimas. (Submitted for publication), 2015.
- Presented at *INFORMS Annual Meeting*, November 2015.
- Invited talk at University of Auckland, January 2016.
- Invited talk at MIT Operations Research Seminar, September 2016.

"Optimal Regression Trees" with D. Bertsimas. (Working paper), 2016.
"Robust Classification" with D. Bertsimas, C. Pawlowski and Y. Zhuo. (Submitted for publication), 2016.
"Binary Interruptible Load Optimisation" with G. Zakeri, presented at *ORSNZ*, November 2013.

Honors and Awards

2016 MIT Operations Research Center Best Student Paper Award, for *"Optimal Classification Trees"*.
2014-2015 William Asbjornsen Albert Memorial Fellowship, Massachusetts Institute of Technology.
2013 James Gordon Goodfellow Memorial Prize, University of Auckland.
(Most distinguished academic performance throughout the entire engineering program)
2013 Young Practitioner's Prize, Operations Research Society of New Zealand.
(For "Binary Interruptible Load Optimization")
2013 Senior Scholar Award, University of Auckland. (Top of graduating engineering class)
2013 Fulbright Science and Innovation Graduate Award, Fulbright Program [not accepted].
2010-2013 Dean's Honours List, University of Auckland.
2011-2013 First in Paper Awards, University of Auckland. (Highest score in 19 out of 23 courses taken)
2011 Undergraduate Prize for Excellence in Statistics, Statistics New Zealand.
2010 Faculty of Engineering Undergraduate Scholarship, University of Auckland.
2010 Faculty of Engineering Kick-Start Scholarship, University of Auckland.
2009 New Zealand Scholarship Premier Award, NZQA. (Top 8 high school students in New Zealand)

Skills and Activities

Programming: primary languages Python, Julia, VBA. Secondary languages C, C++, JavaScript, R.
Software for Operations Research: Gurobi, AMPL, JuMP, Excel Solver/OpenSolver, MATLAB.
Familiar with most optimization software tools and solvers.

Primary developer of the OpenSolver add-in, which enables open-source optimization within Microsoft Excel (230,000+ downloads) and Google Sheets (13,000 weekly active users). See opensolver.org for more details.

Contributor to JuliaOpt (optimization within the Julia programming language, see juliaopt.org).

Citizenship Citizen of New Zealand

Patrick Eschenfeldt

Operations Research Center
Massachusetts Institute of Technology
77 Massachusetts Avenue, E40-103
Email: peschen@mit.edu

6 McLean Pl, Apt. 3
Cambridge, MA, 02140
630-338-7952

Education

Massachusetts Institute of Technology, Cambridge, MA
Candidate for PhD in Operations Research; expected completion, November 2016. GPA: 4.8/5.0
Advisor: Prof. David Gamarnik

Harvey Mudd College, Claremont, CA
BS in Mathematics, May 2012.
Graduated with high distinction, with honors in Humanities, Social Sciences, and the Arts.
GPA: 3.85/4
Thesis title: *Approval Voting in Box Societies*

Experience

2012–Present **Massachusetts Institute of Technology**, Cambridge, MA
Research Assistant
Advisor: Prof. David Gamarnik
Investigating the power of two choices in heavy-traffic queueing systems, proving results about the convergence of such systems to their limiting behavior. Exploring the use of message passing algorithms for optimization on graphs, with code implemented in Julia.

2015 (Summer) **Disney Research Boston**, Cambridge, MA
Intern
Supervisor: Jonathan Yedidia
Designed a novel algorithm to solve inference problems while learning from observed data and implemented this algorithm in Julia.

2011–2012 **Harvey Mudd College**, Claremont, CA
Mathematics Department Thesis Student
Supervisor: Francis Su
Explored a multi-dimensional voting model via geometry and graph theory, and proved results in extremal graph theory.

2011 (Summer) **Harvey Mudd College**, Claremont, CA
Mathematics Department Summer Researcher
Supervisor: Nicholas Pippenger
As a member of a team of two, worked on a project connecting queueing systems and random graph models, proving results about their asymptotic behavior.

2010-2012 **Harvey Mudd College**, Claremont, CA
Mathematics Department Grader
Graded and provided feedback on assignments for various courses, including partial differential equations, linear algebra, multi-variable calculus, differential equations, statistics and probability.

2009–2010 **Argonne National Laboratory**, Argonne, IL
(Summer) *Student Researcher*
Supervisor: Gyorgy Babnigg
Designed and developed a web application for the Biosciences division, creating a user interface for scanning and labeling of images. Implemented code to perform bioinformatic analysis of electrophoresis gels.

Teaching Experience

2014 **Massachusetts Institute of Technology**, Cambridge, MA
(Fall) *Teaching Assistant* for Fundamentals of Probability (6.436J/15.085J)
Held office hours and recitations, graded homework and provided solutions.

Publications

"Join the shortest queue with many servers: the heavy traffic asymptotics", with D. Gamarnik, in revision. Poster presented at 2014 Stochastic Networks Conference.

"Proactive message passing on memory factor networks", with D. Schmidt, S. Draper, and J. Yedidia, submitted.

"Stochastic service systems, random interval graphs and search algorithms", with B. Gross, and N. Pippenger, Random Structures and Algorithms, 45: 421–442.

"Supermarket queueing system in the heavy traffic regime: short queue dynamics", with D. Gamarnik, submitted.

Computer Skills

Proficient in Julia, Mathematica, LaTex, and Microsoft Office, Familiar with Java, MATLAB, C Sharp, and Python.

Citizenship Citizen of United States of America

Virgile Galle

Operations Research Center
Massachusetts Institute of Technology
77 Massachusetts Avenue, E40-130
Cambridge, MA 02139
www.mit.edu/~vgalle/ Email: vgalle@mit.edu

250 Western Ave, #1
Cambridge, MA 02139
617-304-3806

Education

Massachusetts Institute of Technology, Cambridge, MA
Candidate for PhD in Operations Research; expected completion, February 2018. GPA: 5.0/5.0
Relevant Courses: Robust, Integer and Combinatorial Programming and Machine Learning
Advisors: Profs. Cynthia Barnhart and Patrick Jaillet

École Centrale, Paris, France
Bachelor and Master of Engineering, June 2012 and 2013.
Major: Applied Mathematics and Statistics

Lycée Louis-Le-Grand, Paris, France
Sept. 2009 – July 2011
Intensive preparation in Math and Physics for the highly competitive national entrance exams to the leading French Grandes Écoles (engineering schools)

Work Experience

2016 (Summer)
Schlumberger Doll Research Center, Cambridge, MA
Research Scientist
Pointed out the potential improvement of long term rigs scheduling and fleet sizing. Modeled mathematically the problem and solved it using IP and tuned evolutionary algorithms. The proposed solution incorporates new constraints, halves the cases of customer dissatisfaction and increases up to 5% the field production value. Implemented a fully documented package in Julia, ready to be linked with the existing software.

2015 (Summer)
Amazon.com, Seattle, WA
Operations Research Intern
Modeled the inbound network of Amazon.com, used classical OR techniques to solve several optimization problems based on forecast and/or historical data in order to decrease both costs and lead times. Implemented two modules with documents for business and research teams.

2012 (Summer)
Thales, Glasgow and Belfast, United Kingdom
Intern
Assembled advanced electronics systems for 6 weeks in high tech factories, learned how to follow and create processes, and experienced their importance while working abroad for the first time.

Research Experience

2013–Present
Massachusetts Institute of Technology, Cambridge, MA
Research Assistant
Advisors: Prof. Cynthia Barnhart and Prof. Patrick Jaillet

Thesis work: Increase the efficiency of port yards by managing efficiently the movements of containers in their storage layouts.

2012-2013 **École Centrale Paris**, Paris, France
Research Assistant
Supervisor: Prof. Gilles Faÿ
Development of new statistical methods to model and test uniformity of the 3D sphere. Application in astrophysics and biology.

Publications

"An average-case asymptotic analysis of the Container Relocation Problem, with S. Borjian, V. Manshadi, C. Barnhart and P. Jaillet, published in Operations Research Letters, 44 (6) (2016), http://dx.doi.org/10.1016/j.orl.2016.08.006.

"The Stochastic Container Relocation Problem", with S. Borjian, V. Manshadi, C. Barnhart and P. Jaillet, working paper, September, 2016.

"Online Container Relocation Problem", with C. Barnhart and P. Jaillet, working paper, October, 2015.

"Container Relocation Problem: Approximation, Asymptotic and Incomplete Information", with S. Borjian, V. Manshadi. C. Barnhart and P. Jaillet, available on ArXiv (arXiv:1505.04229), October, 2015.

Honors and Awards

2013 Jean Gaillard Memorial Fellowship
Committee on General Scholarships of Harvard University
Fellowship to study at the Massachusetts Institute of Technology

2013 ODGE Robert Guenassia Award
Office of the Dean of Graduate Education, MIT
Fellowship to study at the Massachusetts Institute of Technology

Skills and Activities

Language: English (fluent), French (native), German (intermediate), Italian (beginner)
Programming: Matlab (expert), Julia (expert), Python (proficient), R (proficient), C++ (course experience), Gurobi (proficient), Xpress (proficient), SQL (prior experience)
Software: Photoshop, Première Pro and After Effect
Sports: Competition of Tennis, Rugby and Soccer. Empire diploma in the two first
Music: 12 years of piano and musical studies at the conservatory of Paris

Ability to work

EU as citizen of France; USA with a F-1 student visa (OPT)

Siong Thye Goh

Operations Research Center
Massachusetts Institute of Technology
77 Massachusetts Avenue, E40-103
Cambridge, MA 02139
Email: stgoh@mit.edu

550, Memorial Drive Apt 10E-4
Cambridge, MA, 02139-4910
617-955-3041

Education

Massachusetts Institute of Technology, Cambridge, MA
Candidate for PhD in Operations Research; expected completion, September 2017.
Advisor: Prof. Cynthia Rudin

National University of Singapore, Singapore
SM in Mathematics, February 2010.
Thesis title: *Fast Implementation of Linear Discriminant Analysis*

National University of Singapore, Singapore
BS in Applied Mathematics and Statistics, First Class Honors in Applied Mathematics, Second Major in Statistics, June 2007.

Work Experience

2014 (Summer)
Siemens Research Corporate, New Jersey, USA
Intern
Research on application of sparse coding on fault analysis.

2009-2012
Temasek Laboratories, NUS, Singapore
Associate Scientist
Research on information security. In particular, in the design of stream ciphers, hash functions, Boolean functions and random number generators.

2005 (Summer)
Public Service Division, Prime Minister Office, Singapore
Intern
Analyze the medical benefits provided in the private sector vs. the public sector.

Research Experience

2012–Present
Massachusetts Institute of Technology, Cambridge, MA
Research Assistant
Advisor: Prof. Cynthia Rudin
Designing interpretable and scalable algorithms for highly imbalanced data.
Designing cascaded high dimensional histograms.
Designing new algorithms for causal inference.

2007-2009
National University of Singapore, Singapore
Research Assistant
Supervisor: Delin Chu
Research on Linear Discriminant Analysis.

Teaching Experience

2007-2009 **National University of Singapore**, Singapore
Teaching Assistant for MA1101R Linear Algebra 1 (2008, 2009, Spring)
Teaching Assistant for MA1100 Fundamental Concepts of Mathematics (2008, Fall)
Teaching Assistant for MA1505 Mathematics 1 (2007, Fall)

Publications

"*Cascaded High-Dimensional Histograms and an Application to Criminology*", with Cynthia Rudin, Statistics for Social Good, JSM 2016.

"*Cascaded High-Dimensional Histograms : A Generative Approach to Density Estimation",* with Cynthia Rudin,, The Extraordinary Power of Data, JSM 2016.

"Gas Turbine Sensor Failure Detection Utilizing a Sparse Coding Methodology", with C. Yuan, A. Chakraborty, M. Evans, Patent W2016040082A1, 2016.

"Gas Turbine Failure Prediction Utilizing Supervised Learning Methodologies", with X. Cai, A. Chakraborty, M. Evans, C. Yuan, Patent W2016040085A1, 2016.

"Box Drawings for Learning with Imbalanced Data", with Cynthia Rudin, KDD 2014, pages 333-342, 2014.

"Several Classes of Even-Variable Balanced Boolean Functions with Optimal Algebraic Immunity", with C.H. Tan, IEICE Transactions on Fundamentals of Electronics, Communications and Computer Sciences, E94-A(1), pages 165-171, 2011.

"Characterization of All Solutions for Undersampled Uncorrelated Linear Discriminant Analysis Problems", with Delin Chu and Y.S. Hung, SIAM. J. Matrix Anal. & Appl., 32(3), pages 820-844, 2011.

"A New and Fast Orthogonal Linear Discriminant Analysis on Undersampled Problems", with Delin Chu, SIAM. J. Sci. Comput., 32(4), pages 2274-2297, 2010.

"A New and Fast Implementation for Null Space Based Linear Discriminant Analysis", with Delin Chu, Pattern Recognition, 43(4), pages 1373-1379, 2010.

Honors and Awards

2007-2009 Best Teaching Assistant Awards at Department and Faculty Level
Department of Mathematics, Faculty of Science, NUS

2007 The Ven Dr D D Chelliah Gold Medal
National University of Singapore
Best Student in Mathematics.

Skills and Activities

Computer Skills: R, Python 2, Python 3, Matlab, C, Latex, Gurobi.
Languages: English, Chinese, Malay

Citizenship Citizen of Malaysia

Swati Gupta

Operations Research Center
Massachusetts Institute of Technology
77 Massachusetts Avenue, E40-149
Cambridge, MA 02139

383 Cardinal Medeiros Avenue
Cambridge, MA 02141
Phone: (617) 955 5639
http://swatig.scripts.mit.edu/home
Email: swatig@mit.edu

Education

Massachusetts Institute of Technology, Cambridge, MA
Candidate for PhD in Operations Research; expected completion, June 2017. GPA: 5.0/5.0
Thesis title: *Methods for Learning Combinatorial Structures*
Advisors: Profs. Michel Goemans and Patrick Jaillet

Indian Institute of Technology, Delhi, India
Bachelors and Master in Technology, Aug 2011.
Thesis title: *Towards a 4/3-approximation for the Metric Traveling Salesman Problem*

Work Experience

2013 (Jun-Aug)
IBM Research, Zurich, Switzerland
Research Scientist
Worked on an exploratory microscopic railway scheduling problem and developed a route-choice version of the aperiodic event scheduling method with the IBM researchers that outperformed existing work in terms of running time and accuracy.

2009 (Jun-Aug)
Microsoft Research, Bangalore, India
Summer Intern
Demonstrated various inconsistencies in the documentation of third-party firewalls by creating comprehensive multi-level tests to determine the (observable) arbitration policies of firewalls.

2008 (Jun-Aug)
Department of EECS at University of Michigan, Ann Arbor, Michigan
Summer Intern
Developed a unified framework to help analyze various security policies from heterogeneous systems like SSH, Firewalls, NFS using internal representations as decision diagrams (now under GNU license).

Research Experience

2011–Present
Massachusetts Institute of Technology, Cambridge, MA
Research Assistant
Advisors: Profs. Michel Goemans and Patrick Jaillet
Developed methods for improving the running time of online learning algorithms when the decisions are combinatorial in nature, using techniques from convex and combinatorial optimization. Also, developed an efficient algorithm for performing line searches in combinatorial polytopes that improves the state of the art by a factor of $O(n^6)$.

Co-authors: Georgia Perakis, Maxime Cohen, Jeremy Kalas
Developed an efficient algorithm using a graphical representation for pricing multiple items over a time horizon with the goal of maximizing profit subject to various business constraints. Also,

developed approximations for the reference price model and introduced the notion of a virtual reference price to improve tractability for multiple-items with cross-item dependencies.

Co-authors: Dimitris Bertsimas, Joel Tay
For the problem of inventory routing where a supplier has a contract with individual customers to monitor their inventory of a commodity and restocking it to guarantee availability, formulated a binary optimization problem to make key operational decisions (fleet sizes, routes, resupplying quantities). This approach scales to around 6000 customers, making it feasible for the industrial applications.

Co-authors: John Silberholz, Iain Dunning
To address several shortcomings with how empirical testing is often applied in practice, developed an open-source test bed of Max-Cut and QUBO (quadratic binary optimization problem) instances, along with an implementation of 37 heuristics. Using machine learning techniques, can predict (with high accuracy) which heuristic will work best on any unseen instance (given only their features), a key question facing practitioners.

Teaching Experience

2013 (Fall) **Massachusetts Institute of Technology**, Cambridge, MA
Teaching Assistant for Introduction to Mathematical Programming (15.081)

2015 (Spring) **Massachusetts Institute of Technology**, Cambridge, MA
Teaching Assistant for Network Science and Models (15.094)

Publications

"Solving Combinatorial Games using Counting, Projections and Lexicographically Optimal Bases", with Michel Goemans and Patrick Jaillet, to be submitted to Mathematical Programming. (Preliminary version to be presented at Optimization for Machine Learning Workshop, NIPS 2016)

"Line Search in Submodular Polyhedra", with Michel Goemans and Patrick Jaillet, working paper.

"What Works Best When? A Framework for Systematic Heuristic Evaluation", with John Silberholz and Iain Dunning, 2nd round of revision in INFORMS Journal on Computing.

"A Scalable Robust and Adaptive Optimization Approach to Inventory Routing", with Dimitris Bertsimas and Joel Tay, submitted to Transportation Science.

"*An Efficient Algorithm for Dynamic Pricing using a Graphical Representation*", with Georgia Perakis, Maxime Cohen and Jeremy J. Kalas, to be submitted to Manufacturing & Service Operations Management.

"The two-color Rado number for ax+by = (a+b)z", with Thulasi J. Rangan and Amitabha Tripathi, published in Annal of Combinatorics, 19(2), pages 269-291, 2015.

"A 4/3 approximation for TSP on cubic 3-edge-connected graphs", with Naveen Garg and Nishita Agarwal, to be submitted to Operations Research Letters.

"Discrete Online TSP", with Michel Goemans and Patrick Jaillet, working paper.

"SPAN: A Unified Framework and toolkit for Querying Heterogenous Access Policies", with Kristen LeFevre and Atul Prakash, in the Proceedings of the 4th Usenix Conference on Hot Topics in Security, 2009.

Honors and Awards

2016 Special Recognition by the INFORMS Computing Society
"What Works Best When? A Framework for Systematic Heuristic Evaluation"
For the INFORMS Computing Society Student Paper Competition

2016 Finalist for the INFORMS Service Science Section Student Paper Award
"An Efficient Algorithm for Dynamic Pricing using a Graphical Representation"

2011 Google Women in Engineering award

2009-10 Merit Scholarship at IIT Delhi
Top 7% students at IIT Delhi, and program topper in these semesters

2006 All India Rank 701 (top 0.35%) in the Joint Entrance Examination for IIT

2005-06 National top 1% in the National Standard Examination for Physics

2005 All India Rank of 147 in the National Science Olympiad

2005: Ranked 14 in the Regional Mathematics Olympiad
2004: Ranked 11 in the Regional Mathematics Olympiad
2004: All India Rank 26 and State Rank 2 in the National Cyber Olympiad
2004-11: National Talent Search Examination Scholarship

Skills and Activities

Computing Skills: MATLAB, Julia, R, C/C++, Java, Basic, Python, Pascal, Prolog, AMPL.
MIT LIDS Seminar Liaison, Spring, 2016.
Session Chair for "Games and Optimization over Networks", at INFORMS 2014.
MIT Operations Research Center Seminar Series Organizer, Spring, 2014.
Reviewer for SODA, NIPS, Journal of Naval Research Logistics.
"*Panoramia*": An experimental self-potrait studio at the MIT Museum, Sept 2015-present
Co-founded "Jiyo Re Laado": a platform for creating awareness and dialogue about roles women play in the society, using engaging art activities, 2014.
"*The Power of Exponentials: Big and Small*": scripted and created an educational BLOSSOMS video with John Silberholz and Nataly Youssef. This has been included in State of Florida's high school Mathematics curriculum and has been dubbed in Urdu and Mandarin, and is available with Spanish and Malay subtitles, 2012.

Citizenship Citizen of India

Michael Hu

Operations Research Center
Massachusetts Institute of Technology
77 Massachusetts Avenue, E40-130
Cambridge, MA 02139
Email: hum@mit.edu

70 Pacific St., Apt. 332
Cambridge, MA, 02139
989-430-0750

Education

Massachusetts Institute of Technology, Cambridge, MA
Candidate for PhD in Operations Research; expected completion, June 2019.
Advisor: Prof. Retsef Levi

University of Michigan, Ann Arbor, MI
B.S.E in Industrial and Operations Engineering, May 2014.
Summa Cum Laude

University of Michigan, Ann Arbor, MI
B.S. in Pure Mathematics, May 2014.
High Distinction

Work Experience

2012 (May - Aug)
Abbott Laboratories, Abbott Park, IL
Intern, Global Pharmaceutical Operations
Authored 3 standard operating procedures (SOPs) for OSIsoft PI software, which enabled the Engineering, Quality, and Operations divisions to electronically collect, manage, and analyze real-time data within manufacturing facilities while saving $14,000 annually by eliminating the usage of paper records. Won the national Abbott Intern Case Competition (400+ participants) by working in a team with 8 interns and presenting recommendations for the green and socially responsible implementation of a new manufacturing facility in Haiti.

2011 (May - Aug)
Toyota, Erlanger, KY
Co-op, Production Control - Project Planning and Management
Coordinated the timing and distribution of ~2 Engineering Change Instructions (ECIs) per day, thereby facilitating communication between designers/suppliers/manufacturers, and allowing for the rapid implementation of crucial adjustments in the production processes of 3 different automobile projects. Investigated 46 discrepancies in Toyota's Specification Management System (SMS), and created a document containing detailed countermeasures for each discrepancy; the discrepancies were rectified after the document was implemented by Toyota Motor Manufacturing Kentucky (TMMK), Toyota's largest manufacturing facility outside of Japan. Determined routing for 1004 parts with a 99.8% accuracy rate exceeding Toyota's target of 98.0%.

2010-2011
University of Michigan 3D Lab, Ann Arbor, MI
Programmer
Extended an existing virtual reality (VR) interface in C++ to include functionality for Logitech G25 steering wheels. Integrated haptic feedback into VR simulations to achieve more immersive user experiences.

Research Experience

2014–Present **Massachusetts Institute of Technology**, Cambridge, MA
Research Assistant
Advisor: Prof. Retsef Levi
Researching mathematical optimization approaches to improve incentive mechanisms, resource allocation, and scheduling in healthcare.

2012-2014 **University of Michigan**, Ann Arbor, MI
Research Assistant
Advisor: Mariel Lavieri
Developed mathematical models to improve post-discharge checkup policies for patients in order to reduce hospital readmissions.

Teaching Experience

2016 **Massachusetts Institute of Technology**, Cambridge, MA
(Fall) *Teaching Assistant* for Healthcare Lab: Introduction to Healthcare Delivery in the US (15.777)
Teach remedial recitations on operations management, grade case studies and projects, develop syllabus, and coordinate lectures/lunches with c-level guest speakers.

2015 **Massachusetts Institute of Technology**, Cambridge, MA
(Fall) *Teaching Assistant* for Healthcare Lab: Introduction to Healthcare Delivery in the US (15.767/15.777)
Teach remedial recitations on operations management, grade case studies and projects, develop syllabus, and coordinate lectures/lunches with c-level guest speakers.

2011 **University of Michigan**, Ann Arbor, MI
(Fall) *Teaching Assistant* for Engineers Making a Difference (ENGR 100)
Developed lesson plans for a 60-student first-year engineering course that stressed collaborative thinking, cultural awareness, and fundamental engineering processes. Served as an advisor for three 5-person engineering design teams by offering a 3rd party evaluation of their ideas and teamwork dynamics.

Publications and Refereed Conferences

"Missed opportunities in preventing hospital readmissions: redesigning post-discharge checkup policies" M. Hu, X. Liu, K. Wu, J. Helm, M. Lavieri, T. Skolarus; submitted to Production and Operations Management.

"A model to optimize followup care and reduce hospital readmissions after radical cystectomy", N. Krishnan, X. Liu, M. Hu, A. Helfand, B. Li, J. Helm, C. He, B. Hollenbeck, T. Skolarus, B. Jacobs, The Journal of Urology, May 2016.

"Understanding hospital readmission intensity after radical cystectomy", T. Skolarus, B. Jacobs, F. Schroeck, C. He, A. Helfand, J. Helm, M. Hu, M. Lavieri, B. Hollenbeck, The Journal of Urology, May 2015.

"Readmission intensity after high-risk surgery", B. Jacobs, C. He, B. Li, M. Hu, A. Helfand, N. Krishnan, B. Hollenbeck, J. Helm, M. Lavieri, T. Skolarus, The Journal of Urology, January 2015.

"Sharpening the focus on causes and timing of readmission after radical cystectomy for bladder cancer", M. Hu, B. Jacobs, J. Montgomery, C. He, Z. Ye, Y. Zhang, T. Morgan, A. Weizer, K. Hafez, C. Lee, S. Gilbert, J. Brathwaite, M. Lavieri, J. Helm, B. Hollenbeck, T. Skolarus, Cancer, May 2014.

"Understanding readmission intensity after cystectomy" (presentation), T. Skolarus (presenter), H. Yeo, B. Jacobs, J. Montgomery, C. He, M. Hu, M. Lavieri, J. Helm, B. Hollenbeck, American Urological Association North Central Section 88th Annual Meeting, September 2014.

"Understanding readmissions after cystectomy" (presentation), M. Hu (presenter), B. Jacobs, J. Montgomery, C. He, Z. Ye, J. Brathwaite, T. Morgan, K. Hafez, A. Weizer, S. Gilbert, C. Lee, M. Lavieri, J. Helm, B. Hollenbeck, T. Skolarus, American Urological Association North Central Section 87th Annual Meeting, October 2013.

Honors and Awards

2014 Outstanding Achievement in Mathematics; $100
University of Michigan Department of Mathematics

2014 Phi Beta Kappa, Phi Kappa Phi
University of Michigan

2013 Healthcare Engineering and Patient Safety Travel Grant; $1,000
University of Michigan

2013 Clyde Johnson Scholarship; $10,000
University of Michigan Department of Industrial & Operations Engineering
Engineering scholarship awarded for academic accomplishments.

2013 Accenture Industrial and Operations Engineering Scholarship; $2,500
Accenture, University of Michigan
Engineering scholarship awarded for academic and extracurricular accomplishments.

2011 Holly and John Madigan Scholarship; $15,000
University of Michigan Ross School of Business
Business scholarship awarded for academic accomplishments.

2011 BP Industry Scholarship; $10,000
BP, University of Michigan College of Engineering
Engineering scholarship awarded for academic and extracurricular accomplishments

Skills and Activities

Programming: C/C++, Java, VB/VBA, MATLAB, SQL, Python
Math/stats/simulation: R, SAS, Minitab, Mathematica, Maple, ProModel, Access
Director of Finance, InnoWorks (non-profit STEM camp), 2010-2014.
Associate Editor, Michigan Journal of Business, 2011-2013
Director of Advising, Society of Business Engineers, 2010-2012
Mentor, Big Brothers Big Sisters, 2008-2010

Citizenship Citizen of United States of America and Taiwan

Nikita Korolko

Operations Research Center
Massachusetts Institute of Technology
77 Massachusetts Avenue, E40-143
Cambridge, MA 02139
Cell: 617-949-0881 Email: korolko@mit.edu

286 Hurley
Cambridge, MA 02141

Education

Massachusetts Institute of Technology, Cambridge, MA
Candidate for PhD in Operations Research; expected completion, June 2017. GPA: 5.0
Advisors: Prof. Dimitris Bertsimas and Prof. Patrick Jaillet

Novosibirsk State University, Novosibirsk, Russia
MS in Mathematics, 2011.
Diploma with honors, GPA: 5.0

Novosibirsk State University, Novosibirsk, Russia
BS in Mathematics, 2010.
Diploma with honors, GPA: 5.0

Work Experience

2015 (Summer)
Tesla Motors, Palo Alto, CA
Supply Chain & Optimization Intern
Designed software for efficient load packaging and optimization of inbound supply chain; calculated future savings from its implementation; persuaded management to create a new optimization research group in the company.

2014 (Summer)
Mitsubishi Electric Research Laboratories, Cambridge, MA
Intern in Data Analytics team
Developed accurate load forecasting algorithms for the power grid; designed robust pricing algorithms for EV charging

2014 (Spring)
MIT edX.org, Cambridge, MA
MOOC moderator
Moderated online forum, 15.071x "The Analytics Edge".

Research Experience

2012–Present
Massachusetts Institute of Technology, Cambridge, MA
Research Assistant
Advisor: Prof. Dimitris Bertsimas and Prof. Patrick Jaillet
Design of new efficient methods for solving multistage optimization problems with uncertain parameters that combine advanced CS algorithms and state-of-the-art adaptive optimization techniques.

2008-2012
Sobolev Institute of Mathematics, Novosibirsk, Russia
Research Fellow
Supervisor: S. Vodopianov

Research of composition operators properties of Sobolev spaces on Riemannian and sub-Riemannian manifolds.

Teaching Experience

2015 (Spring) **Massachusetts Institute of Technology**, Cambridge, MA
Teaching Assistant for The Analytics Edge, 15.071
Class organization (120 students), recitations, office hours, grading problem sets and final projects.

2014 (Fall) **Massachusetts Institute of Technology**, Cambridge, MA
Teaching Assistant for Optimization Methods, 15.093
Class organization (100 students), recitations, office hours, grading problem sets, design of midterm and final exams.

2011 (Fall, Spring) **Novosibirsk State University**, Novosibirsk, Russia
Teaching Assistant for Mathematical Analysis
Conducted seminars, developed and implemented a personal system to stimulate students' participation in studying process.

Publications

"Modeling and Forecasting of Self-Similar Power Load Due to EV Fast Chargers", with Z.Sahinoglu, D.Nikovski, IEEE Trans. Smart Grid, July 2015

"Robust Optimization of EV Charging Schedules in Unregulated Electricity Markets", with Z.Sahinlglu, IEEE Trans. Smart Grid, August 2015.

"Robust Optimization of EV Charging Schedules in Unregulated Electricity Markets", IEEE Trans. Smart Grid.

"Sobolev Spaces and Quasiconformal Mappings on Riemannian Manifolds", XLIX International Students Conference "Student and Scientific and Technological Advance", 1st prize, April 2011.

"Composition Operators of Sobolev Spaces on Riemannian Manifolds", XLVIII International Students Conference "Student and scientific-and-technological advance", 2nd prize, 2010.

Honors and Awards

2010-2012 Grant of the President of Russia for State Support of Young Scientists and Leading Scientific Schools
Project: Metric spaces mappings, global geometry and topology

2009-2012 Russian federal grant: Scientific, Academic and Teaching staff of innovative Russia
Project: Fundamental problems of geometrical analysis

2011-2012 Opportunity Grant of the Public Affairs Section of the U.S. Embassy in Moscow for talented international students

2010 Baker Hughes Scholarship
Project: Inverse problems of geodesic radiolocation

2008, 2011 Vladimir Potanin Endowment Scholarship
Given to 20 out of 200 students with GPA 5.0 (for at least 1 year of study) on the basis of leadership and the talent for organization

2010 Lyapunov Scholarship
"Sobolev Spaces and Quasiconformal Mappings on Riemannian Manifolds"

Skills and Activities

Programming: Python, C/C++, Julia (JuMP), Matlab, R, Gurobi/CPLEX, SQL, LaTex
LIDS Student Conference organizer, 2015
Athletics Chair at ORC MIT, 2015- Present
Head of the Math section in the social nonprofit project "Science to the children" (2008-2011);
Member of the Academic Council at Novosibirsk State University (2007-2011)

Citizenship Citizen of Russia

Jerry L. Kung

Operations Research Center
Massachusetts Institute of Technology
77 Massachusetts Avenue, E40-130
Cambridge, MA 02139
Email: jkung@mit.edu

163 Morrison Ave, Apt. 2
Somerville, MA 02144
908-812-6449

Education

Massachusetts Institute of Technology, Cambridge, MA
Candidate for PhD in Operations Research; expected completion, June 2017. GPA: 4.9/5.0
Thesis: *An Analytics Approach to Problems in Health Care*
Advisor: Prof. Dimitris Bertsimas

University of Cambridge, Cambridge, UK
MASt in Applied Mathematics, May 2012.
Essay: Ranking, Reputation, and Recommender Systems

Harvard College, Cambridge, MA
AB in Applied Mathematics: Computer Science, June 2011.
GPA: 3.92/4.0. Summa cum laude with highest honors in field; Thesis: Incentive Design for Adaptive Agents

Work Experience

2013 (Summer)
Cytel Statistical Software, Cambridge, MA
OR Analyst / Programmer Intern
Created optimization models to determine policies robust against treatment stockout for adaptive clinical trials under varying conditions. Devised, implemented, and tested extensions to clinical supply simulator to validate proposed optimization models. Documented testing results and existing simulation code for developers.

Research Experience

2012–Present
Massachusetts Institute of Technology, Cambridge, MA
Research Assistant
Advisor: Prof. Dimitris Bertsimas
My research is in the area of health care analytics. We predict waiting times for high quality kidneys to inform physicians on whether to accept or decline marginal quality kidney offers for their patients. We build an optimization model to prescribe health provider selection decisions to decrease costs and improve outcomes. We design and test methods for simultaneously optimizing for efficacy and toxicity in clinical trials.

Teaching Experience

2016 (Spring)
Massachusetts Institute of Technology, Cambridge, MA
Teaching Assistant for 15.727: The Analytics Edge for Executive MBA
Taught recitations via WebEx, graded assignments, provided final project critiques and feedback.

2015 (Fall) **Massachusetts Institute of Technology**, Cambridge, MA
Teaching Assistant for 15.060: Data, Models, and Decisions for MBA
Taught weekly recitations, led exam review sessions, and held weekly office hours. Created materials for problem sets and exams. Graded assignments, cases, and exams. Awarded the MIT Sloan Outstanding TA award based on quality and quantity of student nominations

2014-2015 (Spring) **Massachusetts Institute of Technology**, Cambridge, MA
Teaching Assistant for 15.071: The Analytics Edge for MBA
Created materials for and conducted biweekly recitations. Held weekly office hours. Revised problem set content and graded problem sets and projects. Met with individual project groups to hone final project ideas.

2015 (Summer) **MITx**, Cambridge, MA
Teaching Assistant for 15.071x: The Analytics Edge MOOC
Coordinated administrative aspects for running massive open online course version of the Analytics Edge, which engaged more than 20,000 students and was completed by more than 3,000 students. Redesigned and implemented both the midterm project and final exam on the edX course platform.

2010-2011 (Spring) **Harvard University School of Engineering and Applied Sciences**, Cambridge, MA
Teaching Assistant for Applied Mathematics 121: Introduction to Optimization
Conducted interviews to select teaching fellows. Worked with teaching staff to improve teaching quality via student feedback, micro-teaching sessions, and section tapings. Ensured all administrative aspects of the course ran smoothly. Designed and tested new Extreme Optimization project assignment for students. Taught weekly review sections, held weekly office hours, and graded problem sets and exams.

Publications

"An Analytics-Based Decision System for Kidney Offer Acceptance", with Dimitris Bertsimas, Nikos Trichakis, Parsia Vagefi, David Wojciechowski. In preparation.

"Optimal Selection of Health Care Providers", with Dimitris Bertsimas. In preparation.

"Robust Aircraft Routing", with Chiwei Yan. Accepted to Transportation Science, 2015.

"A Course on Advanced Software Tools for Operations Research and Analytics", with Iain Dunning, Vishal Gupta, Angie King, Miles Lubin, John Silberholz. INFORMS Transactions on Education 15(2): 169-179, 2015.

"Incentive Design for Adaptive Agents", with Yiling Chen, David Parkes, Ariel Procaccia, Haoqi Zhang. In Proceedings of the 10th International Conference on Autonomous Agents and Multiagent Systems (AAMAS), Taipei, Taiwan, May 2011.

Honors and Awards

2016 (Spring) MIT Sloan Outstanding TA Award
Awarded the only Outstanding TA Award for 2015-2016 based on quantity and quality of student nomination letters for 15.060: Data, Models, and Decisions. Overall instructor rating of

6.8/7.0 from 52 respondents.

2015 (Summer) Anna Valicek Best Student Paper Award at AGIFORS
"Robust Aircraft Routing"
Awarded to the best student paper and presentation at AGIFORS, the Airline Group of the International Federation of Operational Research Studies.

2012 (Fall) National Science Foundation Graduate Research Fellow
Research fellowship recognizing outstanding students in science, technology, engineering, and mathematics.

2011 (Spring) Harvard Herchel Smith Postgraduate Scholarship
Full funding for all fees, tuition, living costs, and travel expenses for one year of postgraduate study at Emmanuel College, Cambridge. Awarded to outstanding Harvard undergraduates in mathematics and applied sciences.

2010 (Spring) Phi Beta Kappa Junior 24
Awarded for record of outstanding scholarly achievement, demonstrating both depth of study and breadth of intellectual interest.

2010 (Spring) Derek C. Bok Certificate of Distinction in Teaching
Awarded for exceptional performance as teaching fellow for AM121: Introduction to Optimization. Overall instructor rating of 4.7/5.0 from 17 respondents.

2007 (Spring) The Star-Ledger Mort Py Scholarship
Full four-year tuition scholarship for undergraduate study at Harvard College. Awarded to one student in New Jersey each year.

Skills and Activities

Computer Languages: R, Julia, Python, Java, LaTeX
Languages: English (native), Mandarin Chinese (HSK Level 10, 3/2009), Spanish (AP Score 5, 5/2006)
ORC Peer Mediator and Counselor, MIT Resources for Easing Friction and Stress (2014-Present)
Applied Mathematics Non-Resident Tutor, Harvard Leverett House (2011-Present)
Chief Auditor and Member of Board of Directors, Harvard International Relations Council (2010-2011)
Under-Secretary-General for Economic and Social Council, Harvard Model United Nations

Citizenship Citizen of United States of America

Jing Lu

Operations Research Center
Massachusetts Institute of Technology
77 Massachusetts Avenue, E40-130
Cambridge, MA 02139
Email: jl3724@mit.edu

24 Chestnut St.
Cambridge, MA02139
646-639-5939

Education

Massachusetts Institute of Technology, Cambridge, MA
Candidate for PhD in Operations Research; expected completion, June 2019 GPA: 5.0
Advisor: Prof. Carolina Osorio

New York University, New York, NY
BS in Mathematics and Economics, June 2014.

Work Experience

2012 (Summer)
Joseph Investment, Beijing, China
Data Analyst
Collect data for all Chinese listed companies to study Chinese house and education market and participate in Taiqi Education's publication process

Research Experience

2014–Present
Massachusetts Institute of Technology, Cambridge, MA
Research Assistant
Advisor: Prof. Carolina Osorio
• Working on using queueing theory to give a tractable and scalable approximation of traditional traffic flow theory, and use the scalable stochastic network model proposed to address traffic control problem on large-scale network both offline and online.
• Working on smart sampling design for computationally costly stochastic traffic simulators, focus on the sampling strategies of simulation-based optimization.

2013
New York University, New York, NY
Optimizing Elevator Traffic Flow
Supervisors: Dr. Lisa Rogers and Prof. Katie Newhall
Optimized the elevator traffic in NYU's Courant Institution building by agent-based modeling, and gave some practical advices to passengers.

2013
New York University, New York, NY
Geometric Realization of Burnside Group B(3,3)
Supervisor: Dr. Lukas Koehler
Studied combinatorial group theory and complex algebraic curves and investigated the topic with a view towards constructing a potential counterexample to Shafarevich conjecture.

2012
New York University, New York, NY
Tax Effect on Soda Consumption
Supervisor: Prof. Andrew Paizis

Studied the problem of how tax affects the consumption of junk food (soda), whether tax is an efficient method to control the consumption of junk food by implementing econometrical model.

Teaching Experience

2010-2014 **New York University**, New York, NY
Teaching Assistant for Calculus I,II,III and Linear Algebra
Grade homework sets for undergraduate courses.

Publications

"A probabilistic traffic-theoretic network loading model suitable for large-scale network analysis", with Carolina Osorio, submitted to Transportation Science, Sep 1st, 2016.

"On the approximation of joint queue-length distributions in large-scale urban networks", with Carolina Osorio, submitted to ISTTT22, August, 2016.

"Analytical stochastic link transmission model suitable for large-scale analysis", with Carolina Osorio, presented at ISMP 2015, INFORMS 2015.

"A probabilistic traffic theoretic and scalable network loading model", with Carolina Osorio, presented at TU Delft, European Association for Research in Transportation (hEART) 2016.

Honors and Awards

2013 Honorable mention
(Spring) "Mastering the Oven: a Genetic Approach"
Mathematical Contest in Modeling (MCM) 2013

2012 Honorable mention
(Spring) "An Agent-Based Model for Camping Along the Big Long River"
Mathematical Contest in Modeling (MCM) 2012

Skills and Activities

Languages: Chinese (native), English (fluent)
Programming Language: LaTeX, Matlab, R, Python, Java
Software: Aimsun, Microsoft Office, Netlogo
Member of NYU Tae Kwon Do Club, 2010-2014
Research Fellow of Math Modeling Club of Courant Institute, 2011-2013
Member of MIT Sports Tae Kwon Do Club, 2015-2016

Citizenship Citizen of China

Miles Lubin

Operations Research Center
Massachusetts Institute of Technology
77 Massachusetts Avenue, E40-103
Cambridge, MA 02139
Email: mlubin@mit.edu

8 Leon St. Apt. 1
Somerville, MA 02143
Phone: 917-608-7970

Education

Massachusetts Institute of Technology, Cambridge, MA
Candidate for PhD in Operations Research; expected completion, June 2017. GPA: 5.0/5.0
Advisor: Prof. Juan Pablo Vielma

University of Chicago, Chicago, IL
MS in Statistics & BS in Applied Mathematics, August 2011. GPA: 3.96/4.0.
Phi Beta Kappa, Student Marshal

Research Experience

2012–Present **Massachusetts Institute of Technology**, Cambridge, MA
Research Assistant
Advisor: Prof. Juan Pablo Vielma
Computational optimization: integer programming, conic optimization, automatic differentiation, stochastic and robust optimization, algebraic modeling, parallel computing techniques for large-scale problems.

2014-2016 (Summers) **Los Alamos National Laboratory**, Los Alamos, NM
Visiting Fellow
Supervisors: Russell Bent, Michael Chertkov, and Scott Backhaus
Power system operation under uncertainty: robust and chance-constrained optimal power flow and unit commitment. Integration of wind energy with the grid.

2010-2012 **Argonne National Laboratory**, Argonne, IL
Undergraduate Intern and Predoctoral Appointee
Supervisors: Mihai Anitescu and Cosmin Petra
High-performance computing for large-scale stochastic programming. Linear-algebra decompositions within interior point and simplex methods.

Teaching Experience

2016 (Spring) **Massachusetts Institute of Technology**, Cambridge, MA
Teaching Assistant for 15.085 "Integer Programming & Combinatorial Optimization"

2014-2016 (Winters) **Massachusetts Institute of Technology**, Cambridge, MA
Teaching Assistant for Software Tools for Operations Research
Student instructor, developed and taught a 3-hour session.

Publications

Refereed Journal Articles

"*JuMP: A modeling language for mathematical optimization*". I. Dunning, J. Huchette, and M. Lubin. To appear in SIAM Review.

"*Extended Formulations in Mixed Integer Conic Quadratic Programming*". J. P. Vielma, I. Dunning, J. Huchette, and M. Lubin. To appear in Mathematical Programming Computation.

"*A robust approach to chance constrained optimal power flow with renewable generation*". M. Lubin, Y. Dvorkin, and S. Backhaus. IEEE Transactions on Power Systems, 2016.

"*Uncertainty sets for wind power generation*". Y. Dvorkin, M. Lubin, S. Backhaus, and M. Chertkov. IEEE Transactions on Power Systems, 2016.

"*Reformulation versus cutting-planes for robust optimization*". D. Bertsimas, I. Dunning, and M. Lubin. Computational Management Science, 2016.

"*Computing in Operations Research using Julia*". M. Lubin and I. Dunning. INFORMS Journal on Computing, 2015.

"*A course on advanced software tools for Operations Research and Analytics*". I. Dunning, V. Gupta, A. King, J. Kung, M. Lubin, and J. Silberholz. INFORMS Transactions on Education, 2015.

"*An augmented incomplete factorization approach for computing the Schur complement in stochastic optimization*". C. Petra, O. Schenk, M. Lubin, and K. G◎artner. SIAM Journal on Scientific Computing, 2014.

"*On parallelizing dual decomposition in stochastic integer programming*". M. Lubin, K. Martin, C. Petra, and B. Sandıkçı. Operations Research Letters, 2013.

"*Parallel distributed-memory simplex for large-scale stochastic LP problems*". M. Lubin, J. A. J. Hall, C. Petra, and M. Anitescu. Computational Optimization and Applications, 2013.

"*The parallel solution of dense saddle-point linear systems arising in stochastic programming*". M. Lubin, C. Petra, and M. Anitescu. Optimization Methods and Software, 2012.

Articles in Refereed Conference Proceedings

"*Unit Commitment with N-1 Security and Wind Uncertainty*". K. Sundar, H. Nagarajan, M. Lubin, L. Roald, S. Misra, R. Bent, and D. Bienstock. Power Systems Computation Conference (PSCC), Genoa, Italy, June, 2016.

"*Extended Formulations in Mixed-Integer Convex Programming*". M. Lubin, E. Yamangil, R. Bent and J. P. Vielma. 18th Conference on Integer Programming and Combinatorial Optimization (IPCO 2016), Liege, Belgium, June, 2016.

"*Parallel algebraic modeling for stochastic optimization*". J. Huchette, M. Lubin, and C. Petra. First Workshop for High Performance Technical Computing in Dynamic Languages (HPTCDL), New Orleans, November, 2014.

"*Scalable Stochastic Optimization of Complex Energy Systems*". M. Lubin, C. Petra, M. Anitescu, and V. Zavala. International Conference for High Performance Computing, Networking, Storage and Analysis (SC), Seattle, November, 2011.

Refereed extended abstracts

"*On efficient Hessian computation using the edge pushing algorithm in Julia*". F. Qiang, C. Petra, M. Lubin, J. Huchette and M. Anitescu. 7th International Conference on Algorithmic Differentiation, Oxford, UK, 2016.

"*Forward-Mode Automatic Differentiation in Julia*". J. Revels, M. Lubin, and T. Papamarkou. 7th International Conference on Algorithmic Differentiation, Oxford, UK, 2016. Presented by J. Revels.

Submitted Articles

"*Unit Commitment with N-1 Security and Wind Uncertainty*". K. Sundar, H. Nagarajan, M. Lubin, L. Roald, S. Misra, R. Bent, and D. Bienstock. Submitted for publication, 2016. (Journal version)

"*Polyhedral approximation in mixed-integer convex optimization*". M. Lubin, E. Yamangil, R. Bent and J. P. Vielma. Submitted for publication, 2016.

"*Two-sided linear chance constraints and extensions*". M. Lubin, D. Bienstock and J. P. Vielma. Submitted for publication, 2016.

Working papers

"*Implementing polyhedral approximation in mixed-integer conic optimization*". M. Lubin, C. Coey, E. Yamangil, R. Bent and J. P. Vielma.

"*Mixed-integer convex representability*". M. Lubin, I. Zadik, and J. P. Vielma.

"*Chance constraints for improving the reliability of ACOPF solutions*". Y. Dvorkin, M. Lubin, L. Roald, and M. Chertkov.

Invited Oral Presentations

Presentations at Academic Institutions

- Imperial College London (Department of Computing), September 2016.
- Universidade Federal do Parana, Curitiba, Brazil, July 2016.
- Zuze Institute Berlin (ZIB), June 2016.
- Massachusetts Institute of Technology
  - Computational Research in Boston and Beyond Seminar, April 2016.
  - MIT Energy Initiative, April 2016.
- University of California, Merced (Applied Mathematics Seminar), January 2016.

• Stanford University (Institute for Computational and Mathematical Engineering), January 2016.
• Carnegie Mellon University (Operations Research Seminar), March 2015.
• University of Edinburgh (Edinburgh Research Group in Optimization Seminar), June 2012.

Conference Presentations

• International Conference on Stochastic Programming, 2016.
• Optimization Days, 2016.
• JuliaCon, 2016.
• INFORMS Annual Meeting, 2015, 2014, and 2013.
• International Symposium on Mathematical Programming (ISMP), 2015 and 2012.
• SIAM Conference on Computational Science and Engineering, 2015.
• Applied Mathematical Programming and Modeling (APMOD), 2014.
• International Conference for High Performance Computing, Networking, Storage, and Analysis (SC), 2014 and 2011.
• International Workshop on Parallel Matrix Algorithms and Applications (PMAA), 2012.

Other

• Computing and Systems Technology (CAST) division of the American Institute of Chemical Engineers (AIChE), webinar, April 2016.

Invited JuMP/Julia Tutorials

• Imperial College London, September 2016
• Universidade Federal do Parana, July 2016 (in Portuguese)
• Optimization Days, May 2016
• JuliaCon, June 2015.
• MIT Energy Initiative, April 2015
• Carnegie Mellon University, March 2015
• Grid Science Winter School, January 2015
• University of California, Berkeley, November 2014
• Universidad Adolfo Ibañez, January 2014 (in Spanish)

Honors and Awards

2015,2016 INFORMS Computing Society Prize && MIT Operations Research Center Best Student Paper Award && COIN-OR INFORMS Cup for "*JuMP: A modeling language for mathematical optimization*"

2015 SIAM Student Travel Award
SIAM Conference on Computational Science and Engineering

2013,2014 Best Paper of 2013, Computational Optimization and Applications Journal && COIN-OR INFORMS Cup for *"Parallel distributed-memory simplex for large-scale stochastic LP problems"*

2014 Honorable Mention, Best Poster Award
Mixed-Integer Programming Workshop, Columbus, OH

2012-2016 DOE Computational Science Graduate Fellowship

Skills and Activities

Co-author of JuMP, an open-source algebraic modeling package for optimization. 1000+ users, used for teaching at 10+ universities worldwide. Co-founder of JuliaOpt organization.
Reviewer for: Mathematical Programming, Mathematical Programming Computation, Computational Management Science, INFORMS Journal on Computing, ComputationalOptimization and Applications, IEEE Transactions on Power Systems, IEEE Transactions on Sustainable Energy, SIAM Journal on Scientific Computing
COIN-OR Technical Leadership Council, Member, 2013-2016
JuliaCon 2015, 2016, Program Committee Member
Session chair at INFORMS 2016, 2014; Optimization Days 2016; ISMP 2015.
COIN-OR Cup Committee; Chair, 2016; Member 2016

Citizenship Citizen of United States of America

Christopher McCord

Operations Research Center
Massachusetts Institute of Technology
77 Massachusetts Avenue, E40-130
Cambridge, MA 02139
Email: mccord@mit.edu

158 Webster Ave
Cambridge, MA 02141
302-824-2250

Education

Massachusetts Institute of Technology, Cambridge, MA
Candidate for PhD in Operations Research; expected completion, May 2019. GPA: 5.0/5.0
Advisor: Prof. Dimitris Bertsimas

Princeton University, Princeton, NJ
BSE, Operations Research and Financial Engineering, June 2015. GPA: 3.97/4.00.
Thesis title: *Reconstructing the History of English Bible Translations*

Work Experience

2016 (Summer) **P2 Analytics**, Cambridge, MA
Data Science Intern
Analyzed hospital operations data and built scheduling algorithm to improve utilization of resources. Used data from industrial fishing company to build predictive catch model.

2015 (Summer) **Moove Technologies, Inc.**, Wilmington, DE
CEO/Co-founder
Developed a mobile app to facilitate social logistics (on AppStore): Android, iOS, and backend development experience.

2014 (Summer) **MITRE Corporation**, McLean, VA
Engineering Intern
Led research project exploring applications of cloud computing and statistical techniques for hyperspectral imaging in interest of national defense.

2013 **DuPont**, Wilmington, DE
Research and Development Intern
Co-designed and ran pilot plant for Fluoropolymers business to generate operating parameters for commercial facility.

Research Experience

2015–Present **Massachusetts Institute of Technology**, Cambridge, MA
Research Assistant
Advisor: Prof. Roy Welsch

Teaching Experience

2016 (Fall) **Massachusetts Institute of Technology**, Cambridge, MA
Teaching Assistant for IDS.012: Statistics, Computation, and Application

Led weekly recitations, held office hours, and helped instructors prepare course material for new capstone undergraduate data science course.

Honors and Awards

2015 (Spring) — Frank S. Castellana Prize
Top senior in Princeton Operations Research and Financial Engineering department.

2013 (Fall) — George B. Wood Legacy Sophomore Prize
Awarded to two juniors at Princeton for their academic achievement in sophomore year.

Skills and Activities

Programming Experience: Python, Java, C, Matlab, R, Swift, Julia

Citizenship Citizen of United States of America

Colin Pawlowski

Operations Research Center
Massachusetts Institute of Technology
77 Massachusetts Avenue, E40-130
Cambridge, MA 02139-4307
Email: cpawlows@mit.edu

318 Beacon St, Apt. 3
Somerville, MA 02143
910-617-9317

Education

Massachusetts Institute of Technology, Cambridge, MA
Candidate for PhD in Operations Research; expected completion, June 2018. GPA: 5.0/5.0
Supported by National Science Foundation (NSF) Graduate Research Fellowship.
Advisor: Prof. Dimitris Bertsimas

Yale University, New Haven, CT
BS in Mathematics (Intensive), May 2014.
GPA: 3.93/4.00; Magna Cum Laude, Phi Beta Kappa Society.

Work Experience

2014 (Summer)
Ancera, Inc., Branford, CT
Analytics Intern
Brainstormed and strategized data approaches for biotech startup specializing in rapid microbial testing for food producers. Developed web application for real-time laboratory management, and implemented systems in Amazon Web Services.

Research Experience

2014–Present
Massachusetts Institute of Technology, Cambridge, MA
Research Assistant
Advisor: Prof. Dimitris Bertsimas
Developed fast, tractable algorithms in machine learning for statistical inference using tools from optimization, with a focus on SVMs for classification, *k*-means clustering, and missing data imputation. Collaborating with MDs from Dana Farber Cancer Institute to develop personalized healthcare recommendations to improve patient outcomes.

2013 (Summer)
Mount Holyoke College REU, South Hadley, MA
Undergraduate Researcher
Advisor: Dylan Shepardson
Researched mathematical modeling and epidemiology. Programmed a population-level model for tuberculosis in the USA, with cost analysis for several intervention strategies.

2011-2012
NASA Flight Opportunities Program, Houston, TX
Microgravity Research Team Leader
Advisor: Andrew Szymkowiak
Led a team of six students; built a prototype of a 3-D cell culture apparatus and tested it aboard NASA's zero-gravity plane. Collaborated with a NASA biologist studying the effects of space-radiation induced carcinomas. Completed test flight aboard NASA "Zero-G" 727 aircraft in May 2012.

Teaching Experience

2015 (Fall) **Massachusetts Institute of Technology**, Cambridge, MA
Teaching Assistant for MBA core course: Data, Models, and Decisions (15.060)
Taught weekly recitations, developed course materials, worked one-on-one with students, graded assignments.

Publications

"*Robust Classification*", with D. Bertsimas, J. Dunn, and Y. Zhuo; submitted to Journal of Machine Learning Research, 2015.

Presentations

"*Missing Data Imputation via a Modern Optimization Lens"*, with D. Bertsimas and Y. Zhuo; INFORMS Nashville, 2016.

"*Robust Support Vector Machines*", with D. Bertsimas; INFORMS Philadelphia, 2015.

"*Novel Properties of Deterministic and Stochastic SIR Models*", with J. Ginepro, E. Hartman, R. Kimura, M. McDermott, D. Shepardson; Joint Mathematics Meetings Conference in Baltimore, 2014; Smith College Women in Mathematics in New England Conference, 2013.

Honors and Awards

2015 NSF Graduate Fellowship
2012 Richter Summer Fellowship
2011 NASA Flight Opportunities Program, national research grant
2011 Connecticut Space Grant Consortium Project Grant

Skills and Activities

Programming: Java, C/C++, Python, Julia
Mathematical Tools: Matlab, Stata, R

Volunteer, The Full Belly Project, Non-profit engineering group, 2010-2012

Citizenship Citizen of United States of America

Clark Pixton

Operations Research Center
Massachusetts Institute of Technology
77 Massachusetts Avenue, E40-130
Cambridge, MA 02139
Email: cpixton@mit.edu

292 Vassar Street, Apt D-5
Cambridge, MA 02139
919-389-3395

Education

Massachusetts Institute of Technology, Cambridge, MA
Candidate for PhD in Operations Research; expected completion, June 2017. GPA: 5.0/5.0
Advisor: Prof. David Simchi-Levi

Brigham Young University, Provo, UT
BS in Mathematics; completed, June 2013. GPA: 3.94/4.0
Magna Cum Laude, minor in Music

Research Experience

2013–Present **Massachusetts Institute of Technology**, Cambridge, MA
Research Assistant
Advisor: Prof. David Simchi-Levi
Areas of Interest: Revenue management, assortment optimization and choice modeling, statistical learning, analytics, personalization

2012-2013 **Brigham Young University**, Provo, UT
Research Assistant
Advisor: Prof. Robin Roundy
Developed a new performance bound for a job scheduling problem under uncertainty.

Industry Experience

2015-Present **PillPack, Inc.**, Somerville, MA
Intern and Research Collaborator
Provided decision support for tactical decisions around production processes, developed mathematical optimization-driven methods to increase production productivity, performed analytics for customer lifetime value analysis

Teaching Experience

2016 (Spring) **Massachusetts Institute of Technology**, Cambridge, MA
Teaching Assistant for Supply Chain Planning (15.060)
Taught recitations, graded

2015 (Summer) **Massachusetts Institute of Technology**, Cambridge, MA
Instructor for online MBA math review course
Developed content, worked with a filming production company to record instruction videos

2014 (Fall) **Massachusetts Institute of Technology**, Cambridge, MA
Teaching Assistant for MBA course Data, Models, and Decisions (15.060)

Taught weekly recitations, developed course materials, worked one-on-one with students, graded assignments

2011-2013 **Brigham Young University**, Provo, UT
(Fall) *Teacher*, Missionary Training Center
Taught the Haitian Creole language and teaching skills to missionaries-in-training

Publications

"Branch-and-Bound Algorithms for Assortment Optimization under Weakly Rational Choice", with David Simchi-Levi, submitted August 2016.

"A Statistical Learning Approach to Personalization in Revenue Management", with Xi Chen, Zachary Owen, and David Simchi-Levi, under revision in *Operations Research,* May, 2015.

"Stochastic Job Scheduling: Minimizing Weighted-Tardiness with Proportional Weights", with Robin Roundy, Working paper.

Skills and Activities

*Skills***:** Programming (Julia, R), mathematical analysis, teaching, leadership and teamwork

Citizenship Citizen of the United States of America

Timothy Scully

Operations Research Center
Massachusetts Institute of Technology
77 Massachusetts Avenue, E40
Cambridge, MA 02139
Email: timscul@mit.edu

17A Forest Street, Apt 4
Cambridge, MA 02140
860-707-2842

Education

Massachusetts Institute of Technology, Cambridge, MA
Candidate for SM in Operations Research; expected completion, June 2017. GPA: 4.9/5.0
Advisors: Profs. Jónas Jónasson and Nikolaos Trichakis

Tufts University, Medford, MA
BA in Mathematics, BA in Quantitative Economics, May 2011.
Summa Cum Laude, Phi Beta Kappa

Work Experience

2015 (Summer) **Transport for London**, London, UK
Data Science Intern, Customer Behavior
Conducted research on machine learning algorithms to infer trip mode from mobile phone sensor information.

2013-2014 **Charles River Associates**, Boston, MA
Associate, Antitrust and Competition
Developed statistical and econometric models to estimate price effects and market power, which were used to assess whether FTC and DOJ should challenge mergers and acquisitions.

2011-2012 **Columbia Business School, Program for Financial Studies**, New York, NY
Research Coordinator
Performed econometric modeling relating to financial markets and investor behavior. Managed a small team of research assistants to meet research needs of faculty in the Finance and Economics program.

2010 Summer **MassMutual Life Insurance**, Enfield, CT
Actuarial Intern, Valuation and Modeling
Developed regression model to predict short-term insurance claims for specific products.

Research Experience

2016–Present **Massachusetts Institute of Technology**, Cambridge, MA
Research Assistant
Advisors: Profs. Jonas Jonnason and Nikos Trichakis
Developed integer optimization models to redesign the liver allocation system, with a focus on improving fairness.

2014-2016 **Massachusetts Institute of Technology**, Cambridge, MA
Research Assistant
Advisor: Prof. Jinhua Zhao

Researched how mobile activity tracking data can be combined with large-scale automated fare collection data to infer attributes of customer behavior

Teaching Experience

2016 (Spring) **Massachusetts Institute of Technology**, Cambridge, MA
Teaching Assistant for Behavior and Policy and 11.478
Assisted in the teaching, content creation, and grading of a project-based course on transportation.

Skills and Activities

Programming: Python, R, Matlab, Stata, SAS, SQL

Citizenship Citizen of United States of America

Shimrit Shtern

Operations Research Center
Massachusetts Institute of Technology
77 Massachusetts Avenue, E40-154
Cambridge, MA 02139
(617) 253-2714 Email: sshtern@mit.edu

19 Rindge Ave.
Cambridge, MA 02140
857-600-2406

Education

Technion - Israel Institute of Technology, Haifa, Israel
PhD, November 2015.
Thesis title: *Robust Tracking via Semidefinite Programming and Nonconvex Quadratically Constrained Quadratic Programming*
Advisor: Prof. Aharon Ben-Tal

Technion - Israel Institute of Technology, Haifa, Israel
MSc in Operations Research and System Analysis, 2008.
Graduated Sume Cum Laude.
Thesis title: *Robust Multi-Echelon Inventory Control*
Advisors: Prof. Boaz Golany and Prof. Aharon Ben-Tal

Technion - Israel Institute of Technology, Haifa, Israel
BSc In Industrial Engineering and Management, 2002.
Graduated Sume Cum Laude.

Work Experience

2008-2011 **RAFAEL – Advanced Defense Systems Ltd.,** Haifa, Israel
Senior Algorithm Developer and Technical Leader - Image Processing group
• Developed algorithms for estimation and control.
• Accompanied algorithmic products from the research stage, through algorithmic module design until achieving operational capability for several projects.
• Technical leader, guiding the work of several algorithm developers and programmers.

2004-2007 **IDF - The Logistics and Medicine Branch,** Tel-Aviv, Israel
Operations Research Officer
• Performed a combination of simulation-based, statistical and economic analyses, as well as combinatorial and continuous optimization to advise project managers and decision makers in logistics decisions such as balancing complex production lines, distribution networks, spare parts planning, and medical evacuation.
• Taught simulation courses within the IDF and gave numerous presentations on simulation and ILS-related subjects.
• Acted as the senior officer in charge of several officers and soldiers in the Industrial Engineering Section.
• Graduated first in my class from the operations research and system analysis in military application course (ORSA-MAC) in the Army Logistic University (formerly ALMC), Fort Lee, VA, in 2006.

2001-2004 **RAFAEL – Advanced Defense Systems Ltd.,** Haifa,Israel
Operations Researcher Analyst in Center of Military Analysis (CEMA).

• Developed mathematical models to evaluate and recommend the optimal inventory levels for military logistic systems.
• Developed a Lanchesterian type attrition model for dynamic stochastic combat (LASTAT).
• Performed experimental planning and statistical analysis of a biometric system.
• Developed an epidemiological Markov-chain-based model on the spread of the avian flu throughout a grouped population.

Research Experience

2015–Present **Massachusetts Institute of Technology**, Cambridge, MA
Postdoctoral Associate at the Operations Research Center
Advisor: Prof. Dimitris Bertsimas
• Developed algorithm for solving two-stage adaptive mixed integer optimization.
• Developed models and solution algorithms for the problem of multi-target tracking.
• Developing a data-driven approach to robust optimization.
• Co-advisor of Zachary Saunders master's thesis in multi target tracking (under supervision of Prof. Dimitris Bertsimas).

2013-2013 **Massachusetts Institute of Technology**, Cambridge, MA
Intern in the Laboratory for Information and Decision Systems (LIDS)
Supervisor: Prof. Asuman Ozdaglar
Development of the analysis and synthesis of network topology for distributed optimization via alternating direction method of multipliers (ADMM), in collaboration with Prof. Ermin Wei.

2011-2015 **Technion - Israel Institute of Technology,** Haifa, Israel
Ph.D. Candidate
Supervisor: Prof. Aharon Ben-Tal
• Developed a new set-valued estimation model for robust tracking through a new approach based on the robust optimization methodology. We showed that this approach generalizes existing models and presented algorithms for nonconvex quadratic optimization aimed at solving and approximating its solution.
• Developed a new proof of linear convergence for away-step conditional gradient for composite functions based on linear duality theory, in collaboration with Prof. Amir Beck.
• Developed a new first-order method, based on fixed-point theory, for solving convex bi-level optimization problems, which includes proof of convergence for the inner problem, for both smooth and non-smooth outer objective functions, in collaboration with Prof. Shoham Sabach.
• Collaborated with a multidisciplinary team to develop an efficient algorithm for the problem of nonconvex sparse phase retrieval.

2004-2008 **Technion - Israel Institute of Technology,** Haifa, Israel
Master's Student
Supervisors: Prof Boaz Golany and Prof. Aharon Ben-Tal.
Application of the robust optimization methodology to a multi-echelon inventory system, including developing the dynamic AARC and GRC models; implementation and analysis of the benefits of shared information and decisions for enhancing network stability and reducing costs.

Teaching Experience

2011-2015 **Technion,** Haifa, Israel
Teaching Assistant for Deterministic models in OR 094313

Undergraduate level course in linear and mixed integer optimization, 160-240 students per semester. TA for 7 semesters. Duties included recitations for 60-80 students, office hours, and preparation of homework, lesson plans and exam questions, and grading of exams.

2011-2014 **Technion**, Haifa, Israel
Teaching Assistant for Optimization 1 098311
Graduate level course in continuous optimization, 10-30 students per semester. TA for 3 semesters. Duties included course administration, recitations, office hours, preparation of homework, lesson plans and exam questions, and grading of homework and exams.

2011-2015 **Technion**, Haifa, Israel
Teaching Assistant for Optimization Methods 097324/ Non-Linear Models in OR 094327
Undergraduate/graduate level course in continuous optimization, 20-40 students per semester. TA for 4 semesters. Duties included course administration, recitations, office hours, preparation of homework, lesson plans and exam questions, and grading of homework and exams.

2000-2001 **Technion**, Haifa, Israel
Teaching Assistant for Probability 1M 094412
Undergraduate level course in probability, 160-240 students per semester. TA for 2 semesters. Duties included recitations for 60-80 students, office hours, preparation of homework, lesson plans and exam questions, and grading of homework and exams.

Publications

"Multi-Target Tracking via Mixed Integer Optimization", with Dimitris Bertsimas, and Zachary Saunders, submitted to IEEE Transactions in Automatic Control, July, 2016.

"A First-Order Method for Solving Convex Bi-Level Optimization Problems", with Shoham Sabach, after revision in SIAM Journal of Optimization, January, 2016.

"Linearly Convergent Away-Step Conditional Gradient for Non-strongly Convex Functions", with Amir Beck, to appear in Mathematical Programming, 2016.

"A Semi-Definite Programming Approach for Robust Tracking", with Aharon Ben-Tal, Mathematical Programming, Vol. 156(1-2), pp. 615-656, 2016.

"Computational Methods for Solving Nonconvex Block Constrained Quadratic Problems", with Aharon Ben-Tal, SIAM Journal of Optimization, Vol. 26(2), pp. 1174-1206, 2016.

"Robust Multi-Echelon, Multi-Period Inventory Control", with Aharon Ben-Tal and Boaz Golany, European Journal of Operational Research, Vol. 199, pp. 198-208, 2009.

Invited Talks

- INFORMS International 2016, Big Island (HI, USA), June 2016.
- 22nd International Symposium on Mathematical Programming (ISMP 2015), Pittsburgh (PA, USA), 2015.
- Operations Research Society - Israel Conference 2015 (ORSIS 2015), Haifa (Israel), 2014.
- Numerical Optimization group seminar led by Prof. Kostina, Philipps-Universität Marburg (Germany), 2014.

• 21st International Symposium on Mathematical Programming (ISMP 2012), Berlin (Germany), 2012.
• Operations Research Society - Israel Conference 2012 (ORSIS 2012), Ma'ale Hahamisha (Israel), 2012.

Conference Talks

• Operations Research Society - Israel Conference 2014 (ORSIS 2014), Tel-Aviv (Israel), 2014.
• EURO Mini-conference on Optimization in the Natural Sciences (EURO mini 2014), Aveiro (Portugal), 2014.
• 22nd European Conference on Operational Research (EURO 2007), Prague (Czech Republic), 2007.
• 14th Industrial Engineering and Management Conference (IE&M 2006), Tel-Aviv (Israel), 2006.
• Operations Research Society - Israel Conference 2006 (ORSIS 2006), Nahariya (Israel), 2006.

Honors and Awards

2015 INFORMS student award in optimization honorable mention
"A Semi-Definite Programming Approach for Robust Tracking"
Given by INFORMS optimization society.

2015 Reuven Rubinstein travel scholarship
Awarded by the faculty of IE&M at the Technion for travel expenses to the 2015 ISMP conference in Pittsburgh, PA.

2015 Excellence scholarship
Awarded by the faculty of IE&M at the Technion to graduate students according to GPA and publication record.

2014 The Irwin and Joan Jacobs fellowship for excellence
Awarded by the graduate school at the Technion to graduate students according to GPA and publication record.

2013 Technion MIT Internship Program (TMIP) Scholarship
Awarded by the TMIP for expenses of Technion graduate students who wish to do a summer internship at MIT.

2002 The Knesset certificate of recognition to outstanding students
A national certificate, awarded by the Knesset (Israeli Parliament) for excellence in undergraduate studies.

Skills and Activities

Languages: English, Hebrew
Programming: Matlab, Julia, R, C/C++
Referee for SIAM Journal on Optimization, Operations Research and Mathematical Programming.
Co-organizer of a faculty day-seminar for undergraduate students, Faculty of IE&M, The Technion, March 2014.

Citizenship Citizen of Israel and Poland

John Silberholz

Operations Research Center
Massachusetts Institute of Technology
77 Massachusetts Avenue, E62-569
Cambridge, MA 02139
617-324-4118 Email: josilber@mit.edu

5 Walbridge St. #1
Allston, MA 02134

Education

Massachusetts Institute of Technology, Cambridge, MA
PhD in Operations Research; September 2015. GPA: 5.0
Advisor: Prof. Dimitris Bertsimas
Thesis: *Analytics for Improved Cancer Screening and Treatment*

University of Maryland, College Park, MD
BS in Mathematics and BS in Computer Science, May 2010.

Work Experience

2011 Summer — **Google**, New York, NY
Software Development Engineer Intern
Implemented validation framework for predictions published by Google AdWords.

2010 — **Enertaq, Inc.**, Chevy Chase, MD
Co-founder and Chief Technology Officer
Co-developed a novel control-theoretic approach to providing electricity grid reliability via demand response. Designed and implemented a distributed software system, managing a small development team.

Research Experience

2015–Present — **Massachusetts Institute of Technology**, Cambridge, MA
Postdoctoral fellow and lecturer
Advisor: Dimitris Bertsimas
Research on health care analytics for cancer screening and treatment.

2011–2015 — **Massachusetts Institute of Technology**, Cambridge, MA
Research Assistant
Advisor: Dimitris Bertsimas
Research on health care analytics for cancer screening and treatment.

Teaching Experience

2016 (Fall) — **Massachusetts Institute of Technology**, Cambridge, MA
Course instructor for 15.060: Data, Models, and Decisions
Delivered two sections of this Sloan MBA Core course on quantitative methods.

2016 (Spring) — **Massachusetts Institute of Technology**, Cambridge, MA
Course instructor for 15.071: The Analytics Edge

Delivered (with Prof. Robert Freund) two sections of this Sloan MBA elective course on analytics. Co-developed 13 new lectures for the course. Teaching evaluation: 6.3/7.0 (155 students).

2013 (Spring) **Massachusetts Institute of Technology**, Cambridge, MA
Teaching Assistant for 15.071: The Analytics Edge
Teaching evaluation: 5.8/7.0 (84 students).

Publications

"Optimal healthcare decision making under multiple mathematical models: Application in prostate cancer screening," with D. Bertsimas and T. Trikalinos. To appear in Health Care Management Science.

"An Analytics Approach to Designing Combination Chemotherapy Regimens for Cancer," with D. Bertsimas, A. O'Hair, and S. Relyea. Management Science, 62(5), 1511–1531, 2016.

"Tenure Analytics: Models for Predicting Research Impact," with D. Bertsimas, E. Brynjolfsson, and S. Reichman. Operations Research, 63(6), 1246–1261, 2015.

"A Course on Advanced Software Tools for Operations Research and Analytics," with I. Dunning, V. Gupta, A. King, J. Kung, and M. Lubin, INFORMS Transactions on Education, 15(2), 169–179, 2015.

"What Works Best When? A Systematic Evaluation of Heuristics for Max-Cut and QUBO," with I. Dunning and S. Gupta. Submitted to INFORMS Journal on Computing.

Honors and Awards

2013 William Pierskalla Best Paper Award
"*An Analytics Approach to Designing Combination Chemotherapy Regimens for Cancer*"
An award for the top healthcare management science paper worldwide

2012 NSF Graduate Research Fellowship Program Award

2010 INFORMS Undergraduate Operations Research Prize
"The Effective Application of a New Approach to the Generalized Orienteering Problem"
An award for the top undergraduate operations research paper worldwide

2009 Barry M. Goldwater Scholarship
An award for the top 278 U.S. undergraduate researchers in science, mathematics, and engineering

Citizenship Citizen of the United States of America

Deeksha Sinha

Operations Research Center
Massachusetts Institute of Technology
77 Massachusetts Avenue, E40-130
Cambridge, MA 02139
617-902-8094 Email: deeksha@mit.edu

550 Memorial Drive, Apt 23A-1
Cambridge, MA 02139

Education

Massachusetts Institute of Technology, Cambridge, MA
Candidate for PhD in Operations Research; expected completion, June 2020. GPA: 5.0/5.0
Advisor: Prof. Vivek Farias

Indian Institute of Technology Bombay, Mumbai, India
Masters and Bachelors in Technology, June 2014, GPA: 9.32/10 Minor in Computer Science.
Thesis title: *Sleep-Wake Up Mechanisms for Cellular Heterogeneous Networks*

National University of Singapore, Singapore
Semester Exchange, Fall 2012, GPA: 4.83/5.

Work Experience

2016 (Winter)
Xerox Research Centre India, Bangalore, India
Intern, Revenue Management
Worked on efficient learning algorithms for learning user-choice models. Also developed an algorithm for finding optimal assortment of products for large-scale problems.

2014-2015
Deutsche Bank, Mumbai, India
Quant Analyst, Equity Product Development Team
Developed a machine learning based multiday unwind and hedging strategy for European cash equities using client history, liquidity, volatility and correlation information. Designed and implemented prediction models for stock daily volume and factor flow. Built a Django-based platform for sharing and maintaining data for the Regulatory Market Initiatives team

2012 (Summer)
IBM India Research Lab, Bangalore, India
Intern, nPlug Scheduling Algorithms for Electric Vehicles and Inverters
Worked on scheduling algorithms for nPlug - a device to ensure that the load on the electrical grid remains almost constant throughout the day. Developed the PNLB+ (Probabilistic Negative Linear Backoff) algorithm to utilize the flexibility offered by devices whose working can be broken into smaller chunks which increased throughput and achieved better peak to average ratio. Performed simulations to ensure performance in varying grid capacity scenarios, fair resource allocation among users and absence of side effects like memory effect.

Research Experience

2015–Present
Massachusetts Institute of Technology, Cambridge, MA
Research Assistant
Advisor: Prof. Vivek Farias

Working in the area of revenue management. Developed an algorithm to find optimal assortment of products while ensuring diversity in the assortment. Constructing and testing an algorithm to find optimal user allocation for AB Testing.

2013-2014 **Indian Institue of Technology Bombay**, Mumbai, India
Research Assistant
Supervisors: Abhay Karandikar and V. Kavitha
Determined the maximum fraction of base stations that can be switched off for given traffic condition and required quality of service in a linear deployment of base stations (using optimization results of Multimodular functions). Determined the optimal on-off pattern of base stations and user-base station association policy. Structural properties of the optimal policy were studied and a closed form expression of the average waiting time of users under this policy was obtained.

2013 **Tohoku University**, Sendai, Japan
(Summer) *Research Intern*
Supervisors: Fumiyuki Adachi and Abolfazl Mehbodniya
Studied horizontal handover mechanisms and analyzed the need for differences in designing vertical handover algorithms for heterogeneous networks. Critically examined merits and shortcomings of available vertical handover algorithms and proposed possible improvements.

2011 **Indian Institute of Science**, Bangalore, India
(Summer) *Research Intern*
Supervisor: Phaneendra Yalavarthy
Explored use of Graphics processing unit (GPU) for performing matrix multiplication of large sized matrices. Implemented GPU multiplication in BLT and DOT image reconstruction problems. Compared CPU and GPU performance for performing matrix multiplication through extensive simulations.

Teaching Experience

2016 **Massachusetts Institute of Technology**, Cambridge, MA
(Fall) *Teaching Assistant* for Introduction to Operations Management (15.761)
Took weekly recitations, graded problem sets and provided assistance to students through weekly office hours.

2012-2014 **Indian Institute of Technology bombay**, Mumbai, India
Teaching Assistant for Data Analysis and Interpretation, Communication Systems, Probability and Random Processes
Took weekly recitations, graded problem sets and exams.

Leadership Experience

2016-Present Member, Academic, Research and Careers Committee, MIT
Leading the Travel Grant program of the Graduate Student Council meant to provide financial support to graduate students for attending conferences.

2016-Present INFORMS Officer and GWAMIT Departmental Representative, MIT
Organizing regular social events in the Operations Research Center and serving as the ORC representative to the Graduate Women's Association

2016-Present Member, Academic, Research and Careers Committee, MIT
Leading the Travel Grant program of the Graduate Student Council meant to provide financial support to graduate students for attending conferences

2013-2014 President, ShARE IITB
Led IITB chapter of ShARE, an international student organization connecting students with corporate leaders.

2011-2012 Internship Coordinator, Practical Training Committee, IITB
Facilitated internship process of 1500+ students as part of a 24 member team.

2010-2011 Vice President, Campus Radio, IITB
Revamped the working of the college radio and mentored 2 web based college radios.

Publications

"Load Dependent Optimal ON-OFF Policies in Cellular Heterogeneous Networks", with V. Kavitha and Abhay Karandikar, submitted to 5th International Workshop on Indoor and Outdoor Small Cells, Wiopt 2014.

"nPlug: An Autonomous Peak Load Controller", with T. Ganu, D.P. Seetharam, V. Arya, J. Hazra, R. Kunnath, L.C. De Silva, S.A. Husain and S. Kalyanaraman, submitted IEEE Journal on Selected Areas in Communication, July, 2013.

Honors and Awards

2014 (Summer) Best Paper Award
"Load Dependent Optimal ON-OFF Policies in Cellular Heterogeneous Networks"
5th International Workshop on Indoor and Outdoor Small Cells, Wiopt 2014.

2014 (Summer) Undergraduate Research Award
"Sleep-Wake Up Mechanisms for Cellular Heterogeneous Networks"
Awarded by IIT Bombay for senior thesis

2012 (Spring) Honda Young Engineer and Scientist Award
1 of 12 awardees in India

2012 (Fall) Temasek Foundation Leadership Enrichment and Regional Networking Award
1 of 3 awardees in India
Scholarship to pursue a semester exchange in the National University of Singapore and enrolled in the program to nurture the next generation of Asian leaders

2009 Dhirubhai Ambani Scholarship
Awarded scholarship for securing state rank 5 in CBSE XIIth Board Exam
Description of award and related paper etc. (Organization or Conference)

2014 Secured class rank 8 in 300+ students in IIT Bombay
Description of award and related paper etc. (Organization or Conference)

Skills and Activities

Technical Skills: Python, MATLAB, C++, Scilab, LaTeX, q, SQL, Django
Certification: CFA Level I
Interests: Dancing (Bollywood), Cooking, Traveling, Reading, Voice-Over

Citizenship Citizen of India

Stefano Tracà

Operations Research Center
Massachusetts Institute of Technology
77 Massachusetts Avenue, E40
Cambridge, MA 02139
Email: stet@mit.edu

125.5 Spring Street
Cambridge, MA 02141
857-284 3405

Education

Massachusetts Institute of Technology, Cambridge, MA
Candidate for PhD in Operations Research; expected completion, June 2017. GPA: 4.7/5
Advisor: Prof. Cynthia Rudin

Collegio Carlo Alberto, Moncalieri, Italy
Master degree in Statistics and Applied Mathematics, April 2012. GPA: 28.9/30
Advisor: Prof. Igor Prünster

School of Mathematical, Physical and Natural Sciences, University of Torino, Italy
Master Degree in Mathematics, April 2012.
Thesis title: *Analytic Properties of Ornstein-Uhlenbeck with Jumps*
Final grade: 110/110.
Advisor: Prof. Enrico Priola

School of Mathematical, Physical and Natural Sciences, University of Torino, Italy
Degree in Mathematics for Finance and Insurance, December 2009.
Thesis title: *Fractals and Brownian Motion in the Analysis of Financial Market*
Final Grade: 110/110 cum laude
Advisor: Prof. Luigia Caputo

Work Experience

2016 (Summer) — **Innovation Institute of IIJ (Internet Initiative Japan)**, Tokyo, Japan
Research Lab associate. Supervisor: Keiichi Shima.
Anomaly detection for syslog messages.

2014 (Summer) — **The Walt Disney Company**, Pittsburgh, PA
Behavioral Economics Lab associate. Supervisor: Maarten Bos.
Psychology of Queueing.

Research Experience

2012–Present — **Massachusetts Institute of Technology**, Cambridge, MA
Research Assistant
Advisor: Prof. Cynthia Rudin
Interpretable Model. Stochastic and Contextual Multi-Armed Bandit Problems.

2011-212 — **University of Torino**, Torino, Italy
Supervisor: Prof. Enrico Priola
Analytic Properties of Ornstein-Uhlenbeck with Jumps.

2008-2009 **University of Torino**, Torino, Italy
Supervisor: Prof. Luigia Caputo
Fractals and Brownian Motion in the Analysis of Financial Market.

Teaching Experience

2012 **Isaac Newton High School**, Chivasso, Italy
Teaching Assistant for Instructor of Basics of Mathematics for Finance.
Teaching of an introductory course in Mathematics for Finance.

Publications

"Regulating Greed Over Time", with Cynthia Rudin, finalist of the IBM Service Science Section Best Student Paper Award at INFORMS 2015.

"On the Cauchy problem for non-local Ornstein-Uhlenbeck operators", with Enrico Priola, Nonlinear Analysis: Theory, Methods & Applications, 2015.

"Leaderboard Position Psychology: Counterfactual Thinking", with E. Sun, B. Jones, and M. W. Bos, CHI EA '15 Proceedings of the 33rd Annual ACM Conference Extended Abstracts on Human Factors in Computing Systems, 2015.

" Supersparse Linear Integer Models for Interpretable Classification", with B. Ustun and C. Rudin, AAAI, 2015.

Honors and Awards

2009-2012 Collegio Carlo Alberto Honors Student scholarship

Skills and Activities

Reviewer for EJOR, AAAI-16, AAAI-13
Programming: Julia, Python, Matlab, R
Languages: Italian (native), English (fluent), German (good), Latin (good), Japanese (beginner)
Volunteer Experience: Disney VoluntEar, Counselor at Community Center of Cavagnolo (Italy)
Hobbies: Traveling, Analytic Philosophy, MENSA member, writing for TV shows

Citizenship Citizen of Austria and Italy

Alexander Michael Weinstein

Operations Research Center
Massachusetts Institute of Technology
77 Massachusetts Avenue, E40-103
Cambridge, MA 02139

Phone: (617) 817-0064
Email: amw22@mit.edu
URL: amw22.scripts.mit.edu/home

Education

Massachusetts Institute of Technology, Cambridge, MA
Candidate for PhD in Operations Research; expected completion, June 2017. GPA: 4.6/5.0
Advisor: Prof. Dimitris Bertsimas

Yale University, New Haven, CT
BA *cum laude* in Economics & American Studies, May 2009. GPA: 3.83/4.00
Thesis: *Reconstructing a Creole City: Place-based Housing Design in New Orleans, Past and Present*

Experience

2012-Present **Massachusetts Institute of Technology,** Cambridge, MA
Graduate Research Assistant for Professor Dimitris Bertsimas, 2014-Present
Research focus: Using models from optimization, statistics, and machine learning to ingest data and make decisions, with applications in medical decision-making, clinical trials, revenue forecasting, and staffing and hiring. Industry collaborations with Boston Medical Center, Brigham and Women's Hospital, Dana Farber Cancer Institute, and Publicis.Sapient.

Graduate Teaching Assistant, Sloan School of Management, 2014-2016
Courses taught: The Analytics Edge (MBA, Executive MBA, and edX online platform), Supply Chain Planning, and Manufacturing System and Supply Chain Design, OR Software Tools.
Student evaluations: Ranged from 6.2 to 6.8 out of 7.0.

Graduate Research Assistant for Professor David Simchi-Levi, 2012-2014
Research focus: Maximizing revenue via dynamic pricing with online demand learning.

2014 **Amazon,** Seattle, WA
(Summer) *Research Scientist Intern*, Inventory Planning and Control (IPC), Fulfillment Optimization
Completed two data science projects evaluating cost reduction proposals in fulfillment of customer orders. Presented results to senior fulfillment managers and research scientists.

2010-2012 **Brigham and Women's Hospital,** Boston, MA
Research Assistant (full-time) at Orthopedics and Arthritis Center for Outcomes Research
Conducted decision analysis using a Markov chain Monte Carlo simulation model of the natural history, progression, and treatment of knee osteoarthritis.

Publications

"Personalized Diabetes Management Using Electronic Medical Records", with D. Bertsimas, N. Kallus, and Y. Zhuo. Under Review.

"Covariate-Adaptive Optimization in Online Clinical Trials", with D. Bertsimas and N. Korolko. Working paper.

"*Lifetime Medical Costs of Knee Osteoarthritis Management in the United States: Impact of Extending Indications for Total Knee Arthroplasty*", with E. Losina, A. Paltiel, et al. Arthritis Care & Research, 2015.

"*Estimating the Burden of Total Knee Replacement in the United States*", with B. Rome, W. Reichmann, et al. The Journal of Bone & Joint Surgery, 2013.

"*Lifetime Risk and Age of Diagnosis of Symptomatic Knee Osteoarthritis in the US*", with E. Losina, W. Reichmann, et al. Arthritis Care & Research, 2013.

"*The Cost-Effectiveness of Total Joint Arthroplasty: A Systematic Review of Published Literature*", with M. Daigle, J. Katz, and E. Losina. Best Practice & Research: Clinical Rheumatology, 2012.

"*Impact of Obesity and Knee Osteoarthritis on Morbidity and Mortality in Older Americans*", with E. Losina, R. Walensky, et al. Annals of Internal Medicine, 2011.

Conference Presentations

"*Personalized Diabetes Management,*" with D. Bertsimas, N. Kallus, and D. Zhuo.

- INFORMS Annual Meeting; November 2016. Nashville, TN.
- American Diabetes Association Scientific Meetings; June 2016. New Orleans, LA.

"*Dynamic Pricing and Demand Learning with Limited Price Experimentation",* with D. Simchi-Levi and H. Wang. INFORMS MSOM Conference; July 2013. INSEAD, Fontainebleau, France.

Presentations at Amer. Academy of Orthopaedic Surgeons (San Francisco, 2012) and Amer. College of Rheumatology Meeting (Chicago, 2011 & Atlanta, 2010); details upon request.

Honors and Awards

2015 Nominated participant in Doctoral Student Colloquium at 2015 INFORMS Annual Meeting.

2009 Norman Holmes Pearson Prize (awarded to the best senior essay) and distinction in the major, American Studies department, Yale University.

2009 Robert Kim Winslow Award (awarded for community leadership) and Master's Cup community spirit award, Yale University.

Leadership *Department peer counselor,* Resources for Easing Stress and Friction, 2015-Present.
Co-coordinator, Operations Research Center Fall Seminar Series, 2015.
President, INFORMS Society at MIT, 2013.

Skills *Programming/Software*: R, Julia, Python, Perl, SQL, MATLAB, Java, VBA, Linux, LaTeX.

Citizenship Citizen of United States of America

Kevin Zhang

Operations Research Center
Massachusetts Institute of Technology
77 Massachusetts Avenue, E40-144
Cambridge, MA 02139
Email: kzhang81@mit.edu

10 Stanford Terrace
Somerville, MA 02143
816-588-2869

Education

Massachusetts Institute of Technology, Cambridge, MA
Candidate for PhD in Operations Research; expected completion, June 2018. GPA: 5.0/5.0
Advisor: Prof. Carolina Osorio

Yale University, New Haven, CT
BS cum laude in Mathematics and Statistics, with distinction in both majors, May 2012.
GPA: 3.83/4.00, Department GPA: 3.94/4.00

Work Experience

2012-2014 **Analytics Operations Engineering, Inc.**, Boston, MA
Operations Research Analyst
Worked on teams of two to six consultants to help clients solve operations problems like improving productivity, lowering costs, and increasing capacity through mathematical modeling, programming, and data-driven decision analysis. Projects included: guiding marketing strategy across print, email, and web channels for a $12B+ retail company; forecasting customer demand and inventory shipments to reduce safety stock levels at a Canadian food distribution company; implementing an inventory allocation tool in newly opened stores for a retail clothing chain; predicting customer repayment behavior for a nationwide loan provider.

2011 (Summer) **Federal Reserve Bank**, Kansas City, MO
Economic Research Intern
Conducted an independent research project on the properties of peer-to-peer (P2P) payment services markets. Developed a game theoretic model for P2P markets based on recent research on network goods and social networks, and investigated sensitivity to market share and pricing through simulation experiments.

2010 (Summer) **National Security Agency**, Fort Meade, MD
Intern, Director's Summer Program
Collaborated with two fellow interns, with support from three agency researchers, on a 10-week long project. Developed methods to attack a sophisticated cryptographic system through application of linear algebra, abstract algebra, and statistics. Published a technical paper for internal use and briefed the Deputy Director of NSA on summer work.

Research Experience

2014–Present **Massachusetts Institute of Technology**, Cambridge, MA
Research Assistant
Advisor: Prof. Carolina Osorio
Working on large-scale stochastic optimization problems as applied to calibration of traffic simulators. Developing computationally efficient methods for online calibration that incorporate

network-specific structural information into Kalman filtering algorithms. Developing a simulator-specific supply calibration algorithm in collaboration with the Intelligent Transportation Systems Lab in Singapore for use in urban traffic networks.

2012 **Yale University**, New Haven, CT
Senior Project – Statistics Department
Supervisor: Jing Zhang
Conducted a genome-wide association study of type 2 diabetes using a block-based Bayesian model and applied our method to a case-control dataset from the Wellcome Trust Case Control Consortium.

2009 **Yale University**, New Haven, CT
Summer Researcher
Supervisor: Hisham Sati
Worked with four undergraduates to develop a consistent representational system for the action of Lie groups on hypermatrices and to investigate the invariance properties of hypermatrices.

Teaching Experience

2016 **Massachusetts Institute of Technology**, Cambridge, MA
(Fall) *Teaching Assistant* for Transportation Systems Analysis: Performance and Optimization (1.200/11.544)
Led weekly one-hour TA sessions, held office hours, and developed problem sets and quizzes for first-year graduate level course. Topics include: traffic flow analysis, deterministic and probabilistic delay models, linear and integer optimization models, queueing networks, stochastic simulation, and network models.

Presentations

"Combining data-driven and model-driven approaches for traffic simulator calibration problems", with C. Osorio, presented at INFORMS 2015.

Honors and Awards

2012 Second Prize at the International Mathematics Competition for University Students

2010 Benjamin F. Barge Prize for solution of original problems in mathematics

2009 Charles M. Runk Prize for demonstrating excellence in a competitive examination in mathematics

2009 Dean's Research Fellowship in the Sciences

Skills and Activities

Programming: R, Matlab, SQL, Java, VBA, C
Languages: English (native), Chinese (elementary)

Citizenship Citizen of the United States of America