

Fei Peng

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Employment and Experience

Industry

Optimized Markets, Inc.

Pittsburgh, PA

Director of Engineering

10/2015 – current

- Within the startup company, took responsibility for the research and development efforts in developing market-leading optimization systems for advertising sales, allocation, and scheduling
- Interacted with customers in gathering requirements, tracking project progress and collecting feedback

FedEx Services

Memphis, TN

Senior Revenue Management Analyst

07/2013 – 11/2013

- Led the customer segmentation study for all customers in Asia-Pacific, to gain insight in their spending patterns and determine the automated individual pricing policy
- Managed U.S. pricing effectiveness by monitoring the performance of customer segments, used findings to guide strategy, recommendations and execution
- Participated in the integration of pricing support systems across global regions and operating companies

Schlumberger-Doll Research

Cambridge, MA

Math & Modeling Intern

06/2012 – 08/2012

- Performed exploratory research study for robust optimization methods
- Investigated optimization schemes applicable to a wide variety of problems in and out of oilfield production systems

ABB (China) Limited

Beijing, China

Supply Chain Management Intern

07/2007 – 09/2007

- Led individual Car Leasing Project involving all 25 branches in Mainland China
- Surveyed and evaluated qualifications and quotes of major car leasing companies. Recommended qualified leasing suppliers for each branch to the VP

Academic

Computer Science Dept., Carnegie Mellon University

Pittsburgh, PA

Research Associate

12/2013 – 09/2015

- Worked on NSF funded project for developing electronic markets for TV and cross-media advertising
- Designed and incorporated the state-of-the-art in optimization and computer science technologies to achieve market clearing efficiency and allow expressive bidding languages

IOE Department, University of Michigan
Research Assistant

Ann Arbor, MI
12/2009 – 05/2013

- Conducted research on radiation therapy treatment plan optimization problems
- Developed novel models and techniques to take into account the latest advances in treatment equipment, and handle uncertainty during treatment
- Designed solution algorithms that achieved improved plan quality while dramatically shortening the planning time for cancer treatments

Radiation Oncology, University of California San Diego
Visiting Graduate Student

San Diego, CA
06/2011 – 08/2011

- Led the effort to develop an efficient algorithm for designing treatments for the Volumetric Modulated Arc Therapy with physicians and fellow researchers
- Resulted in plans matching and outperforming leading commercial planning systems

IOE Department, University of Michigan
Graduate Student Research Assistant

Ann Arbor, MI
06/2010 – 04/2011

- Worked with Waylogics LLC on NSF funded Green Fleet Management System project
- Contributed to an integrated vehicle fleet and mobile workforce management system that minimizes the cost of fuel and environmental impact
- Provided routing strategies through route assignments that took into account different types of drive trains and different fuel consumption along different types of route

Education

University of Michigan

Ann Arbor, MI

Ph.D., Industrial and Operations Engineering (08/2013)

Thesis: *Optimization Methods for Volumetric Modulated Arc Therapy and Radiation Therapy Under Uncertainty*

Committee: Marina A. Epelman (Co-advisor), H. Edwin Romeijn (Co-advisor), Amy M. Cohn, Jeffery A. Fessler, Martha M. Matuszak

University of Michigan

Ann Arbor, MI

M. S., Industrial and Operations Engineering (04/2010)

Beihang University

Beijing, China

B. Mgmt., Industrial Engineering (07/2008)

Beihang University

Beijing, China

B. S. Minor, Applied Mathematics (07/2008)

Professional Service

- Reviewer for *Production and Operations Management*, *Medical Physics*

Publications

Journal Articles / Refereed Conference Proceedings

- F. Peng, T. Sandholm. Scalable segment abstraction method for advertising campaign admission and inventory allocation optimization. In *Proceedings of the 25th International Joint Conference on Artificial Intelligence (IJCAI)*, 2016. Acceptance rate: 24%
- F. Peng, S. Jiang, H. E. Romeijn, and M. Epelman. VMATC: VMAT with Constant Gantry Speed and Dose Rate. *Physics in Medicine and Biology* 60 (2015), 2955-2979
- F. Peng, A. Cohn, O. Gusikhin, and D. Perner. Algorithms for the Hybrid Fleet Vehicle Routing Problem. In *Proceedings of the 1st International Conference on Vehicle Technology and Intelligent Transport Systems* (2015)
- Z. Tian, F. Peng, M. Folkerts, J. Tan, X. Jia, and S. Jiang. Multi-GPU implementation of a VMAT treatment plan optimization algorithm. *Medical Physics* 42, 2841 (2015)
- F. Peng, X. Jia, X. Gu, M. Epelman, H. E. Romeijn, and S. Jiang. A New Column Generation Based Algorithm for VMAT Treatment Plan Optimization. *Physics in Medicine and Biology* 57 (2012), 4569-4588

Book Chapters

- Z. Tian, Q. Gautier, X. Gu, C. Men, F. Peng, M. Zarepisheh, Y. J. Graves, A. Uribe-Sanchez, X. Jia, and S. B. Jiang. SCORE System for Online Adaptive Radiotherapy. Chapter in: *Applications of GPU-based High Performance Computing in Radiation Therapy*, Xun Jia and Steve Jiang, editors. Taylor and Francis (2015)
- F. Peng, Z. Tian, H. E. Romeijn, and C. Men. VMAT Treatment Plan Optimization. Chapter in: *Applications of GPU-based High Performance Computing in Radiation Therapy*, Xun Jia and Steve Jiang, editors. Taylor and Francis (2015)

Patents

- Automated allocation of media campaign assets to time and program in digital media delivery, T. Sandholm, J. Dickerson, F. Peng, *U.S. Patent Application*, January 2016

Other

- F. Peng, Optimization Methods for Volumetric Modulated Arc Therapy and Radiation Therapy Under Uncertainty. *Ph.D. thesis*, University of Michigan 2013
- F. Peng, K. Rashid, and B. Couet, Robust optimization methods for oilfield problems under uncertainty. *Technical Report OFSR/2012/132/MMC*, Schlumberger-Doll Research

Invited Presentations

- T. Sandholm and F. Peng. Scalable segment abstraction method for advertising campaign admission and inventory allocation optimization. *INFORMS Annual Conference*, Nashville, TN (2016)
- F. Peng, H. E. Romeijn, and M. Epelman. A robust re-optimization scheme for Radiation Therapy under uncertainty. *INFORMS Annual Conference*, Phoenix, AZ (2012)
- F. Peng, X. Jia, X. Gu, M. Epelman, H. E. Romeijn, and S. Jiang. Treatment Plan Optimization for Volumetric Modulated Arc Therapy (VMAT). Radiation Oncology Department, *Massachusetts General Hospital* (2012)
- F. Peng, X. Jia, X. Gu, M. Epelman, H. E. Romeijn, and S. Jiang. Models and algorithms for IMAT and VMAT arc therapy plan optimization in Radiation Oncology. *INFORMS Annual Conference*, Charlotte, NC (2011)
- F. Peng, A. Cohn, and O. Gusikhin. Heterogeneous vs. homogeneous vehicle routing: algorithms and implications (Poster). *INFORMS Annual Conference*, Charlotte, NC (2011)
- M. Epelman, F. Peng, and H. E. Romeijn. Models and algorithms for IMAT and VMAT arc therapy plan optimization in Radiation Oncology. *SIAM Conference on Optimization*, Darmstadt, Germany (2011)
- F. Peng. Treatment plan optimization for volume metric modulated arc therapy (Poster) *Engineering Graduate Symposium*, University of Michigan, Ann Arbor, MI (2010)
- F. Peng, M. Epelman and H. E. Romeijn. Exact method for volumetric modulated arc therapy (VMAT) treatment plan optimization. *INFORMS Annual Conference*, Austin, TX (2010)
- F. Peng, M. Epelman, H. E. Romeijn, and M. Sir. Optimization models for radiation therapy under uncertainty. *INFORMS Annual Conference*, San Diego, CA (2009)

Fellowships and Awards

- IOE Bonder Fellowship for Applied Operations Research (sole winner with full fellowship), 2010 – 2011
- Engineering Graduate Symposium Technical Session Award (\$500), Nov 2010
- IOE Department Fellowship (full fellowship), Sep 2009 – May 2010

Fellowships and Awards (Minor)

- Rackham Domestic Travel Grant (&600-\$700), University of Michigan, 2010 – 2012
- Graduate Student Research Assistantship, University of Michigan, 2009 – 2010
- 1st Prize in National English Contest for College Students, Beijing, China, 2007
- Academic Excellence Scholarship, Beihang University, 2005 & 2006
- 3rd Prize in Mathematics Contest, Beihang University, 2005
- Excellent Student Cadre Scholarship, Beihang University, 2005

Teaching

IOE Department, University of Michigan

Ann Arbor, MI

Graduate Student Instructor

Fall 11 – Fall 12, Winter 13

IOE441: Production and Inventory Control (W13)

IOE310: Introduction to Optimization Methods (F11 to F12)

- Assisted the instructor in teaching and management of 100+ junior/senior level students
- Held office hours, developed and taught weekly lab sessions
- Mentored students from project groups

Leadership and Activities

China Business Challenge, University of Michigan

Ann Arbor, MI

Semi-finalist

10/2012 – 11/2012

- Contributed to the development of the business plan for an organic food store in China
- Aimed at building an organic-only store chain and developing the footprint of organic food in China by educating customers about the benefits over conventional produces

Harvard National Model United Nations Conference

Boston, MA

University Delegation Advisor

11/2007 – 02/2008

- Managed the training contents and organized trip itineraries for the 20-person delegation
- Facilitated external communications with Harvard and other universities

School of Economics and Management, Beihang University

Beijing, China

Class Monitor

09/2004 – 09/2005

- Helped class make improvements in academic performance and activities
- Awarded Excellent Student Cadre at the end of academic year

Professional Affiliations

- Institute for Operations Research and the Management Sciences (INFORMS)

Computer Skills

- Programming languages and frameworks
 - Experienced: C, C++, Java, Python; Ruby-on-Rails
 - Familiar: Ruby, Javascript, SAS; Electron, NodeJS
- Technical computing software and solvers: AMPL, Coin-OR, Cplex, Gurobi, Matlab
- Parallel computing: CUDA, OpenMP
- Database query writing (SQL)
- Unix operating system and script writing