Xing Wang

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EDUCATION

Georgia Institute of Technology, Atlanta, GA, USA
Ph.D., Industrial and Systems Engineering (Minor: Math), 05/2013
Thesis: Optimizing ride matches for dynamic ride-sharing systems,
Advisor: Prof. Alan Erera
Cumulative GPA: 3.9/4.0

The University of Texas Health Science Center at Houston, Houston, TX, USA
M.S., Health Information Sciences, 08/2006
Cumulative GPA: 4.0/4.0

Southeast University, Nanjing, Jiangsu, China
B.S., Computer Science and Engineering, 07/2004
Cumulative GPA: 89/100, Major GPA: 93/100

WORK EXPERIENCE

Purdue University, West Lafayette, IN, USA　　　　　　　　　　　　　　**Aug 2023 ~ Current**
Clinical Assistant Professor, Quantitative Methods area, Mitchell E. Daniels, Jr. School of Business
- MGMT 30500: Business Statistics. Introduction to business statistics as related to facilitating managerial decision making. Topics include descriptive statistics, probability models, estimation, hypothesis testing, and regression analysis. Students use software to do their own analyses.
- MGMT 30600: Management Science. Use of optimization, simulation, and decision theory models to support management decision making. Emphasis on modeling and interpreting results for managerial applications of linear and integer programming models, network problems, simulation models, and decision analysis. Computer applications are stressed.

Purdue University, West Lafayette, IN, USA　　　　　　　　　　　　　　**Aug 2022 ~ May 2023**
Lecturer, Vertically Integrated Projects Program, College of Engineering Administration
- VIP and EPICS mentor: guide undergraduate students to design and solve real-world challenging problems from industry and community organizations.

Auburn University, Auburn, AL, USA　　　　　　　　　　　　　　　　　　**2021 ~ 2022**
Instructor, Department of Systems and Technology, Harbert College of Business
- BUAL 2650: Business Analytics II. This is the second course in quantitative analysis in business. Statistical inference, classification analysis, predictive modeling, forecasting, and an introduction to data mining are covered.
- BUAL 5860: Communicating Quantitative Results in Business. This is a capstone course and students work in teams to solve challenging real-world problems. Students also learn to effectively present the quantitative results to an audience.

Instructor, Department of Mathematics and Statistics, College of Sciences and Mathematics
- STAT 3010: Statistics for Engineers and Scientists. Statistical methods and analysis used in engineering and science are introduced.

General Electric Global Research Center, Niskayuna, NY, USA　　　　　**2013 ~ 2020**
Lead Engineer in Operations Research

- GE Healthcare manpower management: develop manpower optimization planning algorithms to optimally assign field engineers to job demand with the objective of minimizing travel distance, over time, and new hire cost.
- GE Capital credit rating assignment: develop efficient algorithms to assign customer credit ratings given GE internal probability of defaults target.
- GE Aviation DMRO (Digital Maintenance Repair and Overhaul): develop optimization algorithms to assign parts to engines in the Shop to balance the metrics like inventory, part cost and engine turnaround time.
- GE Power loss attribution analysis for co-gen power plant: develop algorithms to identify the power capacity and thermal performance loss attributed to plant subsystems.
- GE Capital PPNR (Pre-provision Net Revenue) modeling: develop algorithms to forecast PPNR based on key macro variables across various GE businesses.
- DOE ARPA-E NODES (Network Optimized Distributed Energy Systems): develop an optimization framework that determines load flexibility and bids on a day-ahead basis.

General Electric Global Research Center, Niskayuna, NY, USA   **2011 ~ 2012**
Intern
- Smart Grid: develop algorithms for optimally allocating demand response events.
- Battery energy storage management: develop optimization algorithms to shift and shave peak loads by making use of the battery resource.

Georgia Institute of Technology, Atlanta, GA, USA   **2007 ~ 2013**
Graduate Research Assistant
- NNLS (Nonnegative least square): derive NNLS methods with application to airline problems
- Rideshare: design and develop optimization algorithms for solving real-time dynamic ride-sharing problems. A simulation study was based on 2008 travel demand data from metropolitan Atlanta. Developed graph theory-based combinatorial optimization and stochastic optimization algorithms to solve multiple-choice scenario problems.

The University of Texas Health Science Center at Houston, Houston, TX, USA   **2005 ~ 2006**
Graduate Research Associate
- Motion detection (Neural Mechanisms of Multistable Visual Perception)

JOURNAL PUBLICATIONS

- **Xing Wang**, Niels Agatz, Alan Erera, "Stable Matching for Dynamic Ride-Sharing Systems", *Transportation Science,* 52(4), pp 850-867, 2017
- Dayu Huang, Marco Guerriero, **Xing Wang**, "Detecting trend in randomly switched measurements", *Information Fusion (Fusion), 2015 18th International Conference* on, 1403-1409
- Weiwei Chen, **Xing Wang**, Jon Petersen, Rajesh Tyagi, Jason Black, "Optimal Scheduling of Demand Response Events for Electric Utilities", *IEEE Transactions on Smart Grid,* vol. 4, pp. 2309-2319, Dec 2013
- Niels Agatz, Alan Erera, Martin Savelsbergh, **Xing Wang**, "Optimization for Dynamic Ride-sharing: A Review", *European Journal on Operational Research,* Part B, 223(2), pp 295-303, 2012
- Niels Agatz, Alan Erera, Martin Savelsbergh, **Xing Wang**, "Sustainable Passenger Transportation: Dynamic Ride-Sharing: a Simulation Study in Metro Atlanta", *Transportation Research,* Part B Methodological, 45(9), pp 1450-1464, 2011

PATENTS

- "Integrated Cybersecurity Risk Assessment and State Monitoring for Electrical Power Grid" (Jun 21, 2018)
- "Refinery Insight is software solution which forecasts production losses and provides recommendation to recover or mitigate such losses" (Oct 17, 2017)
- "A Method for Day-ahead Scheduling of Flexible Loads & DERs" (Dec 15, 2016)
- "Methods for Optimally Allocating Demand Response Events" (Dec 15, 2011)

HONORS AND AWARDS

- Above & Beyond Bronze Award (Deliver results in an uncertain world): develop the flexible loads forecasting and optimization for the DOE (Department of Energy) project, 03/2017
- Above & Beyond Bronze Award (Deliver results in an uncertain world): win the 2016 GRC Dushman Award as part of the GE Research/GE Capital analytics team, 05/2016
- Above & Beyond Bronze Award (Stay lean to go fast): scale the digital twin operating optimization template - loss attribution, 05/2016
- Above & Beyond Bronze Award (Deliver results in an uncertain world): successfully lead the Management Sciences 2015 strategic offsite, 06/2015
- Above & Beyond Bronze Award (learn and adapt to win): model risk management FastWorks session for leveraged lending GE Capital, 05/2015
- Above & Beyond Bronze Award (expertise): build and validate stress testing model for GE Capital, 11/2014
- Above & Beyond Bronze Award (expertise): build a powerful battery load forecaster & schedule optimizer, 03/2012
- Computational Cognitive Neuroscience Conference 2006 Fellowship, 10/2006
- First prize in a poster competition on 11th Annual Research Day held by UT - Health Science Center, 11/05
- Golf Tournament Endowment Scholarship in UT-Health Science Center, 10/05
- Southeast University "Protective Relaying" Industrial Scholarship (5 out of 200), 2002-2003
- Class-A Student Honor, 2002-2003
- Skill Level 10 (highest rank) in the Piano-Playing Examination in Jiangsu Province, China, 1996

SKILLS

- Programming Language: C++, Java, MATLAB, Python, R
- Optimization Software: LINDO, CPLEX, Gurobi, CBC
- Simulation Software: Arena