

Kun Xie

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Education

- **The Hong Kong University of Science and Technology (HKUST)** Hong Kong
Ph.D Industrial Engineering and Decision Analytics 9/2014 – 8/2018 (expected)
 - Relevant Coursework: Machine Learning, Introduction to Algorithms, Deterministic Models in Operation Research, Stochastic Models in Operation Research, Advanced Production Planning and Control, Engineering Statistics, Stochastic Calculus, Convex Optimization
- **Nanjing University (NJU)** Nanjing
B.Sc Mathematics 9/2010 – 6/2014
 - Relevant Coursework: Real Analysis, Mathematical Analysis, Advanced Algebra, Probability Theory, Stochastic Process, C++ Programming, Scientific Computing, Numerical Analysis

Research Interests

- Machine Learning, Algorithms, Operations Research and Optimization, Stochastic Modeling, Data Mining and Analysis

Research Experience

- **The Steady State of the Limit Order Book with Infinite Number of States** Hong Kong
Research Topic, Supervisor: Prof. Jiheng Zhang, Dept. of IEDA 1/2015 – 8/2018 (expected)
 - All decisions made by buyers/sellers in the market could be modeled by Poisson process
 - The limit (steady) state of the best prices among buyers and sellers was derived via queueing theory and probability theory
 - Working paper, still in progress
- **Demand Forecast** Hong Kong/Shenzhen
SF Technology Cooperation Project, Project Developer 4/2017 – 10/2017
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- **Commercial District and Potential Customer** Hong Kong/Shenzhen
SF Technology Cooperation Project, Project Developer 4/2017 – 10/2017
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- **Identify Risk Customer** Hong Kong/Shenzhen
SF Technology Cooperation Project, Project Developer 4/2017 – 10/2017
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- **A Near-Optimal Algorithm for the Robust Convex Optimization** Hong Kong
Convex Course Project, Instructor: Prof. Daniel P. Palomar, Dept. of ECE 9/2015 – 12/2015
 - Considered a general robust convex optimization problem, which had many unknown parameters in the constraint
 - Selected only finite number of unknown parameters from the given convex set, and then formed a standard convex problem which could be solved via package cvx in MatLab
 - Regarded above result as an approximation to the solution of original problem
- **Time-Based Competition with Benchmark Effects** Nanjing
Undergraduate Thesis, Instructors: Houcai Shen, Ting Wu 9/2013 – 6/2014
 - Considered a duopoly where firms competed on waiting times in the presence of an industry benchmark, which was endogenous and depended on both firms' choices
 - One firm was the leader (offered its waiting time first), another firm was the follower. The demand captured by a firm depended on the gap between the firm's offer and the benchmark
 - When the benchmark was equal to the shorter of the two offered delays, we proved the uniqueness of the Stackelberg Nash equilibrium and obtained its closed form expression

- **An Online Course Selection and Inquiry Database** Nanjing
 Database course Project, Instructor: Zhaoyang Wu 10/2011 – 12/2011
 - Used SQL and Python to develop and implement an online course inquiry system
 - Understood the data structure of the system, extracted data from official websites and database

Skills

- **Programming and Software:** Python, MatLab, Mathematics, SQL
- **Languages:** English (Fluent)

Awards and Honors

Awarded postgraduate studentship (The Hong Kong University of Science and Technology) 2014 – 8/2018 (expected)
 Awarded school outstanding student graduate (Nanjing University) 2014
 Second Prize, People Scholarship (Top 5%, Awarded by Ministry of Education, China) 2012, 2013
 Awarded one of the first academic honor committee members in the student academic community 2012
 Awarded Fundamental Mathematics Scholarship (Dept. of Mathematics, Nanjing University) . . . 2011, 2012, 2013
 Third Prize, People Scholarship (Top 15%, Awarded by Ministry of Education, China) 2011
 Awarded school outstanding student cadre (Nanjing University) 2011
 First Prize at Olympic Mathematics Competition, Jiangsu Province 2009

Extracurricular Activities

Participant, academic communications of Mathematics, Peking University 8/2012
 Participant, four-universities summer campaign of Mathematics, Xiamen University 8/2011
 Co-founder, student academic community of top student training program, Nanjing University . . 2/2011
 Core member, table tennis team, Dept. of Mathematics, Nanjing University 9/2010 – 6/2014
 Monitor, Dept. of Mathematics, Nanjing University 9/2010 – 6/2014