Michael Huang

Contact Information

Bridge Hall 401J
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Education

University of Southern California — Los Angeles, CA
Ph.D. Student in Data Sciences and Operations — 2017-2022 (Expected)
Thesis: Data-driven optimization for the small-data regime
Advisors: Vishal Gupta, Paat Rusmevichientong

Columbia University — New York, NY
M.S. and B.S. in Operations Research, Minor in Computer Science — 2011-2015

Research Interests

Large-scale, data-driven optimization with scarce data and algorithm design with applications in transportation, healthcare, and recommender systems.

Publications

M. Huang and C. Stein. Extending Search Phases in the Micali-Vazirani Algorithm. 16th International Symposium on Experimental Algorithms, pp. 10:1–10:19, 2017.

Working Papers

V. Gupta, M. Huang, P. Rusmevichientong, "Decomposition Methods for Small-Data, Large-Scale Discrete Optimization."
Manuscript in Preparation. Targeted Journal Management Science

C. W. Chan, M. Huang, V. Sarhangian, "Dynamic server assignment in multiclass queues with shifts, with application to nurse staffing in emergency departments."
Submitted to Operations Research

Projects

Mora — 2019-Present
Co-founder, Data Scientist — Boston, MA

- Developing a matching algorithm to improve the quality of behavioral healthcare experience and referral process. Currently collaborating with Harvard University Health Services.
- Accepted into Harvard Business School Rock Incubator Venture Program

Emergency Department Nurse Scheduler — 2016-2017

- Implemented web application to schedule nurses for a trial at Weill Cornell Medicine which significantly reduced wait times in the Emergency department.
- Developed data-driven nurse scheduling policies by studying the discrete-time fluid control problem for a multiclass queuing system that minimizes holding cost

Teaching Experience

Columbia University
Teaching Assistant, CSOR 4231 Analysis of Algorithms I — Fall 2016
Course Assistant, IEOR 4405 Production Scheduling — Spring 2016

Honors and Awards

1st Place, Correlation One Datathon, Southern California — 2017
Marshall/Graduate School Fellowship — 2017-2022
The Robert Gartland Fellowship — 2016

Conferences & Invited Talks

"Decomposition Methods for Small-Data, Large-Scale Discrete Optimization"
- INFORMS Annual Meeting, Seattle, WA — 2019.10

"Extending Search Phases in the Micali-Vazirani Algorithm"
- Symposium on Experimental Algorithms, London, UK 2017.06

Services Conference Organization: INFORMS Session Chair 2019

Computing Python, R, Julia, C/C++, SQL, Mathematica, Matlab, Gurobi