Taoan Huang

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EDUCATION

Tsinghua University   Beijing, China
B.Eng. in Computer Science   Sep 2015 - Present
- Overall GPA: 3.55/4, Institute for Interdisciplinary Information Sciences
- Selected Honors and Awards: Selected to the Tsinghua Xuetang Yao Class (a special pilot computer science class, directed by Professor Andrew Yao), 2017-2018 Outstanding Volunteering award, 2015-2018 Tsinghua Xuetang Program Fellowship, 2017 Outstanding Sports award, 2015 Freshman Scholarship, and Gold Medal in the China Computer Federation's 2014 National Olympiad in Informatics (admission was given to the university because of this achievement)
- Research intern at the University of Hong Kong from Jul 2018 to Aug 2018 (hosted by Professor Zhiyi Huang), and Carnegie Mellon University from Feb 2018 to Jul 2018 (hosted by Professor Fei Fang)

RESEARCH INTEREST

My research interest lies in artificial intelligence, with particular attention to: computational game theory, computational sustainability, and mechanism design

PUBLICATIONS AND WORKING PAPERS

1. Taoan Huang, Bohui Fang, Hoon Oh, Xiaohui Bei, Fei Fang. "Dynamic Trip-Vehicle Dispatch with Scheduled and On-Demand Requests," In Submission to 2019 *International Conference on Autonomous Agents and Multiagent Systems*
2. Taoan Huang, Tianyu Gu, Rohit Singh, Fei Fang. "Green Security Game with Community Engagement," In Submission to 2019 *International Conference on Autonomous Agents and Multiagent Systems*
3. Taoan Huang, Rohit Singh, Fei Fang. "Green Security Game with Community Engagement," 2018 *International Joint Conferences on Artificial Intelligence*: "Artificial Intelligence for Wildlife Conservation" Workshop
4. Hoon Oh, Taoan Huang, Fei Fang. "Multi-Model Ridesharing Problem," In Progress

RESEARCH EXPERIENCE

Carnegie Mellon University   Pittsburgh, USA
Mentee to Professor Fei Fang   Apr 2018 - Nov 2018
Green Security Game with Community Engagement
- Provided the first study in security games which took community engagement into account
- Proposed a novel two-stage game model
- Provided complexity results, and developed exact, approximate, and heuristic algorithms for solving the game
- The algorithms and analysis from this study provides useful insights and guidance for law enforcement agencies wanting to allocate their budget towards recruiting informants, in order to protect wildlife

Carnegie Mellon University   Pittsburgh, USA
Mentee to Professor Fei Fang and Professor Xiaohui Bei   Apr 2018 - Sep 2018
Dynamic Trip-Vehicle Dispatch with Scheduled and On-Demand Requests
- Introduced a novel two-stage model for the dynamic trip-vehicle dispatch problem, by taking into account both scheduled and on-demand requests
- Proposed algorithms for both stages, that came with theoretical guarantees
- Demonstrated the effectiveness of the algorithms through extensive experiments

University of Hong Kong   Hong Kong (SAR), China
Mentee to Professor Zhiyi Huang   Jul 2018 - Aug 2018
Online Algorithms in Real-World Task Assignments
- Derived an optimal deterministic online algorithm, for a general case in the pre-scheduled trip booking problem
- Derived 3-competitive online algorithms, for two special cases in the food delivery problem

Carnegie Mellon University   Pittsburgh, USA
Mentee to Professor Fei Fang   Mar 2018 - Apr 2018
Multi-Model Ridesharing
- Studied the multi-model ridesharing problem, where scheduled and on-demand requests were put into consideration
- Provided complexity results for different settings
- Developed an exact algorithm, as well as several heuristic approaches

Tsinghua University   Beijing, China
Mentee to Professor Pingzhong Tang   Jul 2017 - Dec 2017
Research on Game Theory and Mechanism Design
- Conducted research on predicting human behavior in repeated games, and the allocation of tasks by using an auction mechanism

Tsinghua University   Beijing, China
Mentee to Professor Jian Li   Mar 2017 - Aug 2017
Acoustic Scene Classification
- Developed a classifier to sort a test recording into one of the predefined classes, characterizing the environment with which it was recorded – for example: "park", "street", "office"
- Wrote a technical report "A Multi-Scale Deep Convolutional Neural Network for Acoustic Scene Classification," which was posted on DCASE2017

Megvii Inc.   Beijing, China
Mentee to Dr. Gang Yu   Jul 2016 - Sep 2016
Research on Computer Vision
- Conducted research on human feature detection and classification

ADDITIONAL INFORMATION
Additional Extracurricular Experiences
- Tsinghua Hokkien Culture Association, Vice Chairman (2017-Present): main duties included the recruitment of new members and organizing events such as guest talks opened to public and mid-semester carnivals
- Olympiad in Informatics, Lecturer (2012-2018): invited by my former Olympiad instructor to lecture algorithms and programming to Fujian Province high school students, which ranged from 30 to 80 attendees

Programming Skills
- Languages: C, C++, Python, and Pascal
- Software: Gurobi, LaTeX, Tensorflow, and Keras

Languages
- Chinese (native) and English (fluent)