Frank Cheng

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Education

University of Michigan 2015 to present – PhD in Computer Science (candidacy achieved 2017)
Relevant coursework: Machine Learning, Algorithms, Artificial Intelligence, Data Mining in Large Graphs

University of Michigan 2013 to 2015 – MA in Statistics
Relevant coursework: Statistical Machine Learning, Information Theory, Graphical Models, Mathematical Statistics, Statistical Programming

University of Chicago 2006 to 2010 – BA in Physics and Economics

Work Experience

Research Assistant, Michael P. Wellman, University of Michigan EECS — ***September 2015-present***

- Analyzed economic implications of cap-and-trade emissions regulations using a pricing game framework. Layered game-theoretic analysis on industrial automobile pricing models
- Applied computational game theory to dynamic agent-based models of financial markets

PhD Intern, Google Research — ***June 2017-September 2017***

- Open ended research on methods for differential privacy. Developed, implemented, and tested an original algorithm based on compressed sensing
- Deployed efficient algorithms for sampling statistical distributions at scale

Graduate Intern, MITRE Corporation — ***June 2014-August 2014***

- Implemented, trained, and tuned Hidden Markov Model for speaker segmentation
- Successfully deployed as part of suite of tools used in real judiciary settings

Quantitative Analyst, JustAnswer.com — ***March 2012-June 2013***

- Mined clickstream data to develop online learning bidding algorithm
- Conducted inference on multiple hypothesis A/B tests
- Directly oversaw $100,000 in daily marketing spend

Quantitative Analyst, Bank of America — ***August 2010-March 2012***

- Improved statistical models for estimating loss distribution parameters in top retail lending portfolio
- Used financial and statistical theory to improve hedging procedures for credit and market risk

Publications

F. Cheng, Y. Engel and M.P. Wellman. 2019. “Cap-and-Trade Emissions Regulation: A Strategic Analysis" In *Proceedings of 28th International Joint Conference on Artificial Intelligence* (IJCAI) [pdf]

F. Cheng, M.P. Wellman. 2017. “Accounting for strategic response in an agent-based model of financial regulation” In *Proceedings of the 18th ACM Conference on Economics and Computation* (EC) [pdf]

F. Cheng, J. Liu, K. Amin, M.P. Wellman. 2016. “Strategic payment routing in financial credit networks.” In *Proceedings of the 17th ACM Conference on Economics and Computation* (EC) [pdf]

Skills and Interests

Computer--Proficient in SQL, Python, R, MATLAB, C++. Knowledge of SAS and Java.
Language--Fluent in Chinese (Mandarin and Shanghai Dialect)
Interests--Basketball, Poker, Statistics in sports