Cong Jiang

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- Proficient in robust and interpretive Dynamic Treatment Regimes (DTRs) estimation and Precision Medicine, with 3 major conferences and 2 research awards.
- 4+ years of research experience in developing causal inference, G-estimation, robust Q-learning and network balancing weights methods.
- Experienced with large scale data cleaning, processing and mining; illustrated by analysing datasets from Population Assessment of Tobacco and Health (PATH) Study and International Tobacco Control Project.
- Skilled in R, Python, C/C++, relational databases (e.g., MySQL), data structures and algorithms.

EDUCATION

University of Waterloo (UW), CANADA 3.9/4.0
Ph.D. of Statistics/Biostatistics *Sep. 2017 - Aug. 2022*

City University of New York (CUNY), U.S.A. 3.9/4.0
Master of Mathematics *Aug. 2015 - Jul. 2017*

Anhui University of Finance and Economics, CHINA 90/100
Bachelor of Mathmatical Finance, *Honors with Distinction* *Sep. 2011 - Jul. 2015*

RESEARCH EXPERIENCE

Research Assistantships, UW
Supervisors: Mary E. Thompson and Michael P. Wallace *Sep. 2017 – Aug. 2022*

- Proposing a new balancing weights criterion to overcome the misspecification of some generalized linear models' components. Constructing binary pseudo-outcomes and developing a doubly-robust method when studying the binary outcomes in the optimal DTR estimation.
- Defining a network propensity function and building on it to establish an implementation of an easy-to-use DTR estimation method that remains doubly robust under interference associated with network links.
- Developing robust optimal DTR estimation methods for couples, in the presence of interference, by optimizing the composite outcomes of both ego and alter. Employing ensemble learning method (e.g., Super Learner) to estimate network propensity scores.
- Studying the causal effects of smoking alternatives (such as e-cigarettes and vaping) on nicotine addiction and smoking cessation, while accounting for the effects of the behaviours of other household members.
- Methods of probabilistic record linkage, and their application in deriving efficient estimators that use the linkage information. The methods were applied in datasets from the International Tobacco Control Project.

NYU Langone Health (Buzsáki Lab) **Supported by the Research Foundation of CUNY**
Research Assistant, CUNY (Amarasingham Group) *May 2016 – Jul. 2017*

- Based on a rate- and history-preserving resampling algorithm, we derived a closed-form expression for the distribution of synchrony. We demonstrated that dynamic programming results in a Markov Chain from which we sample, and Fast Fourier Transform (FFT) can accomplish a 'faster-jitter', affording faster computation of the distribution of synchrony.
- Cooperated with Professor Amarasingham and contributed to a simulation study in Platkiewicz, Stark and Amarasingham (2017), *Spike-Centered Jitter Can Mistake Temporal Structure, Neural Computation.*

National Undergraduate Innovation Training Project
Supported by National Undergraduate Innovation Training Foundation *May 2013 – Jul. 2014*

- The Impact of Financial Disintermediation on Asset Allocation Structure of Commercial Banks. Worked with W. Qian and S. Cao, leading to a publication.

PRESENTATIONS

Health Data Science Lab (HDSL), Univerisity of Waterloo **Waterloo, Canada**
C. Jiang *2022*
- Dynamic Treatment Regimes with Interference.

Statistical Society of Canada (SSC) Annual Meeting (virtual)
***C. Jiang**, M.E.Thompson and M.P. Wallace* *2022*
- Doubly Robust Dynamic Treatment Regimen Estimation for Binary Outcomes.

Statistical Society of Canada (SSC) Annual Meeting (virtual)
***C. Jiang**, M.P. Wallace and M.E.Thompson.* *2021*
- Dynamic Treatment Regimes with Network Interference.

Waterloo Student Conference in Statistics, Actuarial Science and Finance **Waterloo, Canada**
***C. Jiang**, M.P. Wallace and M.E.Thompson.* *2020*
- Dynamic Treatment Regimes with Interference — Q-learning.

Statistical Society of Canada (SSC) Annual Meeting **Calgary, Canada**
***C. Jiang**, M.P. Wallace and M.E.Thompson.* *2019*
- Dynamic Treatment Regimes with Interference.

Statistical Society of Canada (SSC) Annual Meeting **Montreal, Canada**
C. Jiang *2018*
- Case Studies in Data Analysis Competition. Modelling and Predicting the Popularity of TED Talks with Cox (Time-Varying) Proportional Hazard Model.

SENSE TO SYNAPSE 2017, The Rockefeller University **New York City, USA**
*J. Platkiewicz, **C. Jiang**, A. Amarasingham.* *2017*
- Validation of Injected Synchrony Models for Detecting Monosynaptic Connectivity Using Large-Scale Labeled Datasets.

RESEARCH PRESENTATION AWARDS

First CANSSI-NISS Health Data Science Workshop
Poster Presentation Competition Award *2021*
"Dynamic Treatment Regimes with Network Interference."

Statistics and Actuarial Science and WatRISQ Research Presentation, UW
Best Research Presentation Prize *2021*
"Dynamic Treatment Regimes with Interference."

SCHOLARSHIPS & AWARDS

- Centre de Recherches Mathématiques STATLAB Postdoctoral Fellowship, $\$10,000$
- OICR Biostatistics Training Initiative Fellowship Award [Top Biostatistics PhDs of Ontario, $\$30,000$]
- Chair Award, Department of Statistics and Actuarial Science, UW
- Doctoral Entrance Award, Department of Statistics and Actuarial Science, UW
- Rich Summer Internships Award, Department of Mathematics, CUNY
- Rich Mathematics Scholarship, CUNY, [Top 3 master of Department of Mathematics, $\$12,000$]

PUBLICATIONS

- **C. Jiang**, M.P. Wallace, and M.E. Thompson (2021). **Dynamic Treatment Regimes with Interference**. *The Canadian Journal of Statistics. Accepted.*
- W. Qian, S. Cao and **C. Jiang**. **Empirical Study of the Impact of Financial Disintermediation on Asset Structure of Commercial Banks**. *Zhejiang Finance*. 7: 45-48 (2014).