THE UNIVERSITY OF BRITISH COLUMBIA
Curriculum Vitae for Faculty Members

Date: August 24, 2024   **Initials**: J. L

1.   **SURNAME**: Li   **FIRST NAME**: Jiajin
                                         MIDDLE NAME(S):

2.   **DEPARTMENT/SCHOOL:** Sauder School of Business

3.   **FACULTY**: Commerce and Business Administration

4.   **PRESENT RANK**: Assistant Professor   **SINCE**: July 2024

5.   **POST-SECONDARY EDUCATION**

University or Institution	Degree	Subject Area	Dates
The Chinese University of Hong Kong	PhD	Operation Research	2017-2021
Chongqing University	BS	Statistics	2013-2017

Special Professional Qualifications

6.   **EMPLOYMENT RECORD**

(a)   Prior to coming to UBC

University, Company or Organization	Rank or Title	Dates
Stanford University	Postdoctoral Research	2021-2024

(b)   At UBC

Rank or Title	Dates
Assistant Professor	July 2024-Present

7.   **LEAVES OF ABSENCE**

8.   **TEACHING**

(a)   *Areas of special interest and accomplishments*

My teaching interests generally focus on the theory and algorithms of continuous optimization, as well as its intersections with machine learning and data science.

(b)   *Courses Taught at UBC*

Session	Course Number	Scheduled Hours	Class Size	Total Hours Taught per Course			
				Lectures	**Tutorials**	**Labs**	**Other**
2024 W1	COMM 616 001	1.5*25 = 37.5	TBD	37.5			

(c)   *Graduate Students Supervised (If Applicable)*

(d)   *A summary of student evaluations of teaching effectiveness scores over the past five years (or since appointment if less than five years)*

(e)   *Continuing Education Activities*

(f)   *Visiting Lecturer (indicate university/organization and dates)*

(g)   *Other*

9.   **EDUCATIONAL LEADERSHIP**

(a)   *Areas of special interest and accomplishments*

My research interests lies in mathematical optimization, design and analyze optimization algorithms and their intersection with machine learning and data science.

(b)   *Curriculum development/renewal*

(c)   *Pedagogical innovation*

(d)   *Applications of and contributions to the scholarship of teaching and learning*

(e)   *Teaching and Learning Grants*

(f)   *Formal educational leadership responsibilities*

(g)   *Innovation in the use of learning technology*

(h)   *Other educational leadership contributions*

10.   SCHOLARLY AND PROFESSIONAL ACTIVITIES

(a)   *Areas of special interest and accomplishments*

(b)   *Invited Presentations (Identify whether International/National/Local)*

1. "Stability Evaluation via Distributional Perturbation Analysis", **The Chinese University of Hong Kong,** Department of Statistics, July, 2024.
    ** International

2. "Nonsmooth Nonconvex-Nonconcave Minimax OPT: Algorithm Design and Convergence Analysis", **Purdue University**, School of Industrial Engineering, January, 2024.
    ** International

3. "Nonsmooth Nonconvex-Nonconcave Minimax OPT: Algorithm Design and Convergence Analysis", **Columbia University,** Department of Industrial Engineering and Operations Research, January, 2024.
    ** International

4. "Nonsmooth Nonconvex-Nonconcave Minimax OPT: Algorithm Design and Convergence Analysis", **University of Waterloo,** Combinatorics and Optimization (C\&O) department, January, 2024.
    ** Virtual

5. "Nonsmooth Nonconvex-Nonconcave Minimax OPT: Algorithm Design and Convergence Analysis", **Cornell University**, Operations Research and Information Engineering, December, 2023.
    ** International

6. "Nonsmooth Nonconvex-Nonconcave Minimax OPT: Algorithm Design and Convergence Analysis", **Rensselaer Polytechnic Institute (RPI)**, Mathematical Sciences, December, 2023.
    ** International

7. "Nonsmooth Nonconvex-Nonconcave Minimax OPT: Algorithm Design and Convergence Analysis", **University of Washington**, Department of Mathematics, December, 2023.
   ** International

8. "Trade-off among Infeasibility, Efficiency and Accuracy for Gromov-Wasserstein Computation", **UT Austin EECS Rising Stars Workshop**, October, 2022.
   ** International

(c) *Other Presentations*

(d) *Other*

(e) *Conference Participation (Organizer, Keynote Speaker, etc.)*

1. "Trade-off among Infeasibility, Efficiency and Accuracy for Gromov-Wasserstein Computation", **Women in Optimal Transport Workshop**, April 2024.
   ** Local

2. "Nonsmooth Nonconvex-Nonconcave Minimax OPT: Algorithm Design and Convergence Analysis", **INFORMS Optimization Society 2024 Conference**, March, 2024.
   ** International

3. "Unifying Distributionally Robust Optimization via Optimal Transport Theory" , **International Conference Stochastic Programming**, July 2023.
   ** International

4. "Nonsmooth Nonconvex Nonconcave Minimax Optimization", **NeurIPS 2022 Workshop on Optimization for Machine Learning**, December, 2022.
   ** International

5. "Nonsmooth Nonconvex Nonconcave Minimax Optimization", **International Conference on Continuous Optimization (ICCOPT),** July, 2022.
   ** International

6. "Trade-off among Infeasibility, Efficiency and Accuracy for Gromov-Wasserstein Computation", **SIAM Conference on Optimization (OP23),** June 2023.
   ** International

7. "Tikhonov Regularization is Optimal Transport Robust under Martingale Constraints", **INFORMS Anuual Meeting**, October, 2022.

       ** International

8. "Modified Frank-Wolfe in Probability Space", **Workshop "Robustness and Resilience in Stochastic Optimization and Statistical Learning: Mathematical Foundations"**, May, 2022.
   ** International

9. "Modified Frank-Wolfe in Probability Space", **VinAI NeurIPS 2021 Workshop**, November, 2021.
   ** Virtual

10. "Efficient and Provable Algorithms for Wasserstein Distributionally Robust Optimization in Machine Learning", **INFORMS Anuual Meeting**, October, 2021.
    ** Virtual

11. "Efficient and Provable Algorithms for Wasserstein Distributionally Robust Optimization in Machine Learning", **ETH AI Center Post-Doctoral Fellowship Symposium**, March, 2021.
    ** Virtual

12. "Fast Epigraphical Projection-based Incremental Algorithms for Wasserstein Distributionally Robust Support Vector Machine", **NeurIPS 2020**, December, 2020.
    ** Virtual

13. "A First-Order Algorithmic Framework for Distributionally Robust Logistic Regression", **NeurIPS 2019 (Poster)**, December, 2019.
    ** International

11. SERVICE TO THE UNIVERSITY

(a)   Areas of special interest and accomplishments

(b)   Memberships on committees, including offices held and dates

(c)   Other service, including dates

12. SERVICE TO THE COMMUNITY

(a)   Memberships on scholarly societies, including offices held and dates

(b)   Memberships on other societies, including offices held and dates

Scholarly Society	Position	Date
Institute for Operations Research and the Management Sciences	Present	2021-Present

(c)   Memberships on scholarly committees, including offices held and dates

(d)   Memberships on other committees, including offices held and dates

(e)   Editorships (list journal and dates)

(f)   Reviewer (journal, agency, etc. including dates)

I have reviewed for the following journals and conferences:

1. Neural Information Processing Systems (NeurIPS) 2023, 2022, 2021, 2020

2. International Conference on Machine Learning (ICML) 2023, 2022, 2021, 2020

3. International Conference on Learning Representation (ICLR) 2022, 2023

4. International Conference on Artificial Intelligence and Statistics (AISTATS) 2023

5. Management Science, Operation Research, Mathematics of Operation Research

6. Mathematical Programming, SIAM Journal on Optimization, Journal of Global. Optimization

7. Journal of Machine Learning Research, IEEE Transaction on Information Theory

8. IEEE Transaction on Knowledge and Data Engineering, Patter Recognition

(g)   External examiner (indicate universities and dates)

(h)   Consultant (indicate organization and dates)

(i)   Other service to the community

13.   <u>AWARDS AND DISTINCTIONS</u>

(a) Awards and nominations for Teaching awards (indicate name of award, awarding organizations, date)

> Awards received by graduate students or postdoctoral fellows under your supervision may be included in a separate section.

(b)   Awards for Scholarship (indicate name of award, awarding organizations, date)

1. UT Austin EECS Rising Star, 2023.

2. Shortlist for ETH AI Center Post-Doctoral Fellowship, 2021.

3. Postgraduate Scholarship in CUHK, 2017-2021.

4. NeurIPS Student Travel Award, 2019.

5. ICML Student Travel Award, 2018.

6. IJCAI-ECAI Student Travel Grant, 2018.

(c)   Awards for Service (indicate name of award, awarding organizations, date)

(d)   Other Awards

14.   OTHER RELEVANT INFORMATION (Maximum One Page)

Date: August 24, 2024   **Initials**: J. L

SURNAME: Li   **FIRST NAME**: Jiajin
                                MIDDLE NAME(S):

1.   REFEREED PUBLICATIONS

^: Corresponding author.

(a)   Journals

1. Distributionally Robust Optimization and Robust Statistics
   Jose Blanchet, **Jiajin Li** , Sirui Lin , Xuhui Zhang (*alphabetical order*).
   Accepted by **Statistical Science.**

2. A Splitting Scheme for Flip-Free Distortion Energies
   Oded Stein**, Jiajin Li**, Justin Solomon.
   SIAM Journal on Imaging Sciences (SIIMS), 2022.

3. Understanding Notions of Stationarity in Nonsmooth Optimization: A Guided Tour
   of Various Constructions of Subdifferential for Nonsmooth Functions
   Jiajin Li, Anthony Man-Cho So, Wing-Kin Ma.
   IEEE Signal Processing Magazine (SPM), 2020, 37(5):18-31.

(b)   Conference Proceedings

1. Stability Evaluation through Distributional Perturbation Analysis
   Jose Blanchet , Peng Cui , **Jiajin Li** , Jiashuo Liu (*alphabetical order*).
   International Conference on Machine Learning (**ICML**), 2024.

2. Universal Gradient Descent Ascent Method for Nonconvex-Nonconcave Minimax
   Optimization
   Taoli Zheng, Linglingzhi Zhu, Anthony Man-Cho So, Jose Blanchet, **Jiajin Li^**.
   Neural Information Processing Systems (**NeurIPS**), 2023.

3. Outlier-Robust Gromov-Wasserstein
   Lemin Kong, **Jiajin Li**, Jianheng Tang, Anthony Man-Cho So.
   Neural Information Processing Systems (**NeurIPS**), 2023.
   Spotlight presentation; top 4% of submissions

4. A Convergent Single-Loop Algorithm for for Gromov-Wasserstein in Graph Data
   Jiajin Li, Jianheng Tang, Lemin Kong, Huikang Liu, Jia Li, Anthony Man-Cho So
   and Jose Blanchet.

International Conference on Learning Representation, (**ICLR**), 2023.

5. Wasserstein Distributionally Robust Linear-Quadratic Estimation under Martingale Constraints
   Kyriakos Lotidi, Nicholas Bambos, Jose Blanchet, **Jiajin Li^.**
   International Conference on Artificial Intelligence and Statistics (**AISTATS**), 2023.

6. Learning Proximal Operators to Discover Multiple Optima
   Lingxiao Li, Noam Aigerman, Vladimir G. Kim, **Jiajin Li**, Kristjan Greenewald, Mikhail Yurochkin, Justin Solomon.
   International Conference on Learning Representation (**ICLR**), 2023.

7. Robust Attributed Graph Alignment via Joint Structure Learning and Optimal Transport
   Jianheng Tang Weiqi Zhang, **Jiajin Li**, Kangfei Zhao, Fugee Tsung, Jia Li.
   International Conference on Data Engineering (**ICDE**), 2023.

8. Tikhonov Regularization is Optimal Transport Robust under Martingale Constraints
   Jiajin Li, Sirui Lin, Jose Blanchet,Viet Anh Nguyen.
   Neural Information Processing Systems (**NeurIPS**), 2022.

9. Rethinking Graph Neural Networks for Anomaly Detection
   Jianheng Tang, **Jiajin Li**, Ziqi Gao, Jia Li.
   International Conference on Machine Learning (**ICML**), 2022.

10. Modified Frank Wolfe in Probability Space
    Carson Kent, **Jiajin Li,** Jose Blanchet, Peter Glynn.
    Neural Information Processing Systems (**NeurIPS**), 2021.

11. Deconvolutional Networks on Graph Data
    Jia Li, **Jiajin Li**, Yang Liu, Jianwei Yu, Yueting Li, Hong Cheng
    Neural Information Processing Systems (**NeurIPS**), 2021.

12. Fast Epigraphical Projection-based Incremental Algorithms for Wasserstein Distributionally Robust Support Vector Machine
    Jiajin Li, Caihua Chen, Anthony Man-Cho So.
    Neural Information Processing Systems (**NeurIPS**), 2020.

13. Dirichlet Graph Variational Autoencoder
    Jia Li, Jianwei Yu, **Jiajin Li**, Honglei Zhang, Kangfei Zhao, Yu Rong, Hong Cheng, Junzhou Huang.
    Neural Information Processing Systems (**NeurIPS**), 2020.

14. The Gambler's Problem and Beyond
    Baoxiang Wang, Shuai Li, **Jiajin Li**, Siu On Chan.

International Conference on Learning Representations (**ICLR**), 2020.

15. A First-Order Algorithmic Framework for Distributionally Robust Logistic Regression
    Jiajin Li, Sen Huang, Anthony Man-Cho So.
    Neural Information Processing Systems (**NeurIPS**), 2019.

16. Policy Optimization with Second-Order Advantage Information
    Jiajin Li, Baoxiang Wang (*alphabetical order*).
    International Joint Conference on Artificial Intelligence (**IJCAI**), 2018.

2.   <u>**NON-REFEREED PUBLICATIONS**</u>

3.   <u>**BOOKS**</u>

4.   <u>**SPECIAL COPYRIGHTS**</u>

5.   <u>**ARTISTIC WORKS, PERFORMANCES, DESIGNS**</u>

6.   <u>**OTHER WORKS**</u>

7.   <u>**WORK SUBMITTED**</u> **(including publisher and date of submission)**

1. Nonsmooth Nonconvex-Nonconcave Minimax Optimization: Primal-Dual Balancing and Iteration Complexity Analysis
   Jiajin Li, Linglingzhi Zhu, Anthony Man-Cho So.
   Under revision at **Mathematical Programming (Series A).**

2. Automatic Outilier Rectification via Optimal Transport
   Jose Blanchet, Jiajin Li, Markus Pelger, Greg Zanotti (**alphabetical order**).
   Submitted to **NeurIPS** 2024.

8.   <u>**WORK IN PROGRESS**</u> **(including degree of completion)**

1. Unifying Distributionally Robust Optimization via Optimal Transport Theory
   Jose Blanchet, Daniel Kuhn, **Jiajin Li**, Bahar Taskesen (*alphabetical order*).
   To be submitted to **SIAM Journal on Optimization**.

2. Towards a First-Order Algorithmic Framework for Wasserstein Distributionally Robust Optimization
   Jiajin Li, Caihua Chen, Anthony Man-Cho So.
   To be submitted to **Mathematical Programming**.

3. Modified Frank Wolfe in Probability Space
   Jose Blanchet, Peter Glynn, Carson Kent, **Jiajin Li** (*alphabetical order*).
   To be submitted to **Mathematics of Operations Research**.

4. Spurious Stationarity and Hardness Results for Mirror Descent
   He Chen, **Jiajin Li**, Anthony Man-Cho So (*alphabetical order)*.
   To be submitted to **Mathematical Programming**.

5. Doubly Smoothed Optimistic Gradients: A Universal and Optimally Achievable
   Approach for Smooth Minimax Problems
   Taoli Zheng, Anthony Man-Cho So, **Jiajin Li^.**
   To be submitted to **SIAM Journal on Optimization**.

6. Smoothed Lagrangian-Based Algorithms for Nonsmooth Nonconvex Constrained
   Optimization
   Linglingzhi Zhu, **Jiajin Li^.**
   The proof is finished.

7. Stability Evaluation through Distributional Perturbation Analysis
   Jose Blanchet , Peng Cui , **Jiajin Li** , Jiashuo Liu (*alphabetical order*).
   The experiments and most of theoretical results are finished.
   Target at **Management Science**.

8. Faster Rate for Nonconvex-Concave Minimax Optimization with Simplified
   Analysis
   Jiajin Li (*single author*).
   The proof is finished.