

Muyan Jiang

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EDUCATION

University of California, Berkeley

PhD in Industrial Engineering & Operations Research — GPA: 3.91/4.0
with Designated Emphasis in Computational Precision Health

Berkeley, USA

Aug. 2022 – May 2027

New York University, Abu Dhabi

Bachelor of Science in Mathematics, Computer Science — GPA: 3.97/4.0

Abu Dhabi, UAE

Aug. 2018 – May 2022

Relevant Courses: Mathematical Programming I/II, Stochastic Analysis, Scientific Computing, Deep Learning, NLP, Algo for Data Sci, SWE, Logistic Management, PDE, Complex Analysis, Algebra I/II, Advanced Stats, Topology

INTERNSHIPS AND RESEARCH

Wells Fargo's Quantitative Analytics Centers of Excellence (AI/ML COE)

Natural Language Processing Intern

June 2024 – Aug. 2024

Charlotte, USA

- Working on building and evaluating large language models (LLMs) for Corporate Model Risk, focusing on developing robust NLP models to enhance risk assessment and management strategies

Microsoft's Software Technology Center of Asia

Software Engineering Intern

June 2021 – Aug. 2021

Suzhou, China

- Developed a sport news multilabeling model for Bing's downstream ranking system, for use during Tokyo Olympics, using graphical knowledge databases and structured neural networks with 100ms latency and 90%+ accuracy

Covid-19 Epidemiological Research

Researcher

May 2020 – Apr. 2021

Abu Dhabi, UAE

- Simulated COVID-19 pandemic using the SEIR-model to suggest an optimal policy for schools to balance trade-offs between in-person classes and the spread of the virus, with tools from Mathematica and MatLab
- Published a paper in *Scientific Report* on the eluding effect of school opening that mathematically explained the ambiguous role of school opening policy during the COVID-19 outbreak and the existence of a phase transition

Covid-19 Literature Classification with Termolator

Researcher

Dec. 2020 – May 2021

Abu Dhabi, UAE

- Developed a tailoring COVID-19 document classification algorithm with a novel termolator technique and boosted F1 Micro measure to 80% with SVC on squared hinge loss
- Published and presented report at the 2021 IEEE MIT Undergraduate Research Technology Conference

Matrix Analysis

Researcher

May 2020 – Present

Abu Dhabi, UAE

- Computed numerical range generating polynomial for low-dimensional reciprocal matrices with Mathematica
- Discovered criteria of ellipticity of low-dimensional reciprocal matrices via the computation of Kippenhahn curve
- Presented "Kippenhahn Curve of Some Reciprocal Matrices" at AMS/MAA's 2021 Joint Mathematics Meeting and published a paper in *Special Matrices*

Lie Algebra

Summer Undergraduate Researcher

Jan. 2019 – Apr. 2020

Abu Dhabi, UAE

- Studied double extensions of restricted Hamiltonian Lie superalgebras preserving the non-degenerate closed 2-forms in characteristic p with non-constant coefficients with a forthcoming report
- Computed filtered deforms of exceptional (Skryabin) modular Lie algebras over algebraically closed fields of characteristic 3 in the restricted case, using "SuperLie" package from Mathematica and Python.

Biodynamic Research Assistant

Peking University Summer Research Intern

Jan 2018 – May 2018

Beijing, China

- Conducted experiments on efficiency of different cells transfection methods indicated by fluorescence expression.
- Assisted on quantitative analysis of data collected, using Python and Mathematica.
- Managed logistics of experiments including PCR and cells transfection instruments.

PUBLICATIONS

- M. Jiang**, Y. Zhang, and A. Aswani, “Interpretable semiparametric regression for treatment-covariates interaction learning: A dual-score system,” 2024
- M. Jiang**, Y. Chen, X. Chen, J. Lavaei, and A. Aswani, “Optimal contract design for end-of-life care payments,” 2024
- M. Jiang** and I. M. Spitkovsky, “On some reciprocal matrices with elliptical components of their kippenhahn curves,” *Special Matrices*, vol. 10, no. 1, pp. 117–130, 2022
- M. Jiang**, R. Fan, and O. Hussein, “Document classification with termolator for covid-19 literature,” in *2021 IEEE MIT Undergraduate Research Technology Conference (URTC)*, pp. 1–5, 2021
- A. Gandolfi, A. Aspri, E. Beretta, K. Jamshad, and **M. Jiang**, “A new threshold reveals the uncertainty about the effect of school opening on diffusion of covid-19,” *Scientific Reports*, vol. 12, p. 3012, Feb 2022
- M. Jiang** and I. M. Spitkovsky, “Numerical ranges of foguel operators revisited,” *Operators and Matrices*, forthcoming, 2023
- K. Dharmarajan, W. Panitch, **M. Jiang**, K. Srinivas, B. Shi, Y. Avigal, H. Huang, T. Low, D. Fer, and K. Goldberg, “Automating vascular shunt insertion with the dvrk surgical robot,” *IEEE International Conference on Robotics and Automation (ICRA)*, 2023

CONFERENCE TALKS

- M. Jiang, “*Numerical Ranges of Reciprocal Matrices.*” International Workshop on Operator Theory and its Applications (IWOTA 2023)
- M. Jiang, “*Numerical ranges of Foguel operators revisited.*” ILAS Special Session on Matrices and Operators, 2023 Joint Mathematics Meetings (JMM)
- M. Jiang, “*Document Classification with Termolator for COVID-19 Literature.*” 2021 IEEE MIT Undergraduate Research Technology Conference (URTC)
- M. Jiang, “*Kippenhahn Curves of Some Reciprocal Matrices.*” 2021 Joint Mathematics Meetings (JMM)

PROJECTS

- China-Gulf Forum: Opportunities and Challenges** Jan. 2019 – Present
Co-founder UAE/China
- Founded the first student-organized multidisciplinary conference in the UAE that aims to address the changing multilateral relationship between China and the Gulf region
 - Hosted annual forums for three years and invited international and local leaders including former UN special representative Bernardino León, and Chairwoman of UAE COVID-19 Management Committee Nawal Al Kaabi
- Aunties Assemble** Sept. 2020 – Jan. 2021
Project Manager / Developer Abu Dhabi, UAE
- Developed and tested a peer-to-peer public food ordering platform for unemployed expats in the MENA area
 - Implemented back end database with MongoDB Atlas, front end with JavaScript, HTML, and CSS
- Academy of Philosophy** Sept 2020 – Present
Co-founder Shanghai, China
- Co-founded a student civil discourse to engage philosophy lovers from college to Ph.D. students in China.
 - Held the first in-person philosophy salon with in Shanghai with prestigious philosophy scholars and 20+ audiences.
- Chongqing Youth Football Union** July 2020 – Present
Co-chair Chongqing, China
- Lead a youth football union that promotes football welfare and encourages teenagers engagement.
 - Hosted the Graduation Cup in 2020, 2021, 2022 with 40+ teams, 10+ local sponsors, and 20,000+ live-stream views.

TEACHING EXPERIENCE

- UC Berkeley:** *INDENG 256 - Healthcare Analytics, Spring 2024.* (Graduate Student Instructor)
- UC Berkeley:** *INDENG 172 - Probability and Risk Analysis for Engineers, Fall 2023.* (Graduate Student Instructor)
- New York University:** *CSCI-UA.0480 - Natural Language Processing, Fall 2021.* (Teaching Assistant)

TECHNICAL SKILLS

Languages: Python, C/C++, C#, Scope, R, JavaScript, HTML/CSS, Mathematica, MatLab
Developer Tools: Google Cloud Platform, VS Code, Jupyter Notebooks, PySpark
Libraries: Pytorch, Keras, pandas, scipy, sklearn, NLTK, BeautifulSoup, seaborn