Muyan Jiang

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Education

University of California, Berkeley — Berkeley, USA
PhD in Industrial Engineering & Operations Research — GPA: 3.85/4.0 — *Aug. 2022 – May 2027*
with Designated Emphasis in Computational Precision Health

New York University, Abu Dhabi — Abu Dhabi, UAE
Bachelor of Science in Mathematics, Computer Science — GPA: 3.97/4.0 — *Aug. 2018 – May 2022*

Relevant Courses: Mathematical Programming I/II, Stochastic Analysis, Scientific Computing, Deep Learning, NLP, Causal Inference, SWE, Logistic Management, PDE, Complex Analysis, Algebra I/II, Theoretical Stats, Topology

Internships and Research

Microsoft's Software Technology Center of Asia — June 2021 – Aug. 2021
Software Engineering Intern — *Suzhou, China*

- Developed a sport news multilabeling model for Bing's downstream ranking system during the Tokyo Olympics using graphical knowledge databases. Achieved structured neural network performance with 100ms latency and over 90% accuracy

Covid-19 Epidemiological Research — May 2020 – Apr. 2021
Researcher — *Abu Dhabi, UAE*

- Simulated the COVID-19 pandemic using the SEIR model. Suggested optimal policies for schools to balance the trade-offs between in-person classes and the spread of the virus using tools from Mathematica and MATLAB
- Published a paper in *Scientific Report* detailing the effects of school opening policies during the COVID-19 outbreak and highlighting the existence of a phase transition

Covid-19 Literature Classification with Termolator — Dec. 2020 – May 2021
Researcher — *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 — May 2020 – Present
Researcher — *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 — Jan. 2019 – Apr. 2020
Summer Undergraduate Researcher — *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 — Jan 2018 – May 2018
Peking University Summer Research Intern — *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 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 is 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

New York University: Teaching Assistant - CSCI-UA.0480 Special Topics: Natural Language Processing, Fall 2021.

UC Berkeley: Graduate Student Instructor - INDENG 172 Probability and Risk Analysis, Fall 2023.

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