Shiyu (Jason) Jiang

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LinkedIn | GitHub | Google Scholar | Personal Website

EDUCATION

Whiting School of Engineering, Johns Hopkins University, *Baltimore, MD* **Aug. 2022 – Dec. 2023 (Expected)**

Master of Science in Engineering in Computer Science

Wenzhou-Kean University | Kean University, *Wenzhou, China | Union, NJ* **Aug. 2018 – May. 2022**

Bachelor of Science in Computer Science, Minor in Mathematical Science GPA: 3.70

RESEARCH INTEREST

Healthcare, Bioinformatics, Sequencing, Multi-Agent Simulation, Artificial Intelligence, and Software Engineering.

TECHNICAL SKILL

Programming Language: Java, Python, Golang, C/C++, JavaScript, HTML/CSS.
Database: MySQL, Redis, MongoDB.
Development Toolkit: Linux/Unix, Git/GitHub, Docker, Kubernetes, Maven, Gradle, Nginx.
Framework: Spring Framework, MyBatis, Flask, ZooKeeper, Spark, ShardingSphere, JUnit, Mockito, UnitTest.
Frontend Framework: React.js, Angular, Dash, Redux, Bootstrap, Material UI.

PUBLICATION

Under Review

- Ye, H., Lv, J., Zhan, Y., Xue, Z., Li, T., **Jiang, S.**, Huang, M., Dong, L., Ren, G., Lei, Q., Fang, W., & Xie, H. (2023). Phase Behavior and Co-localization of Ovalbumin-Lysozyme Complexes. ***Unknown Journal*** (IF). (Waiting for Submission)
- Xxx, xxx, **Jiang, S.**, Luo, J., & Shoaib, M. (2023). AI-LearnMath: An Artificial Intelligence-Based Interactive Learning Platform to Assist Visually Impaired Children in Learning Mathematics. **In 25th *International Conference on Human-Computer Interaction (HCII)***. Springer, Cham. (Submitted)

In Press

- Kim, J. M., Han, J., & **Jiang, S.** (2022). The impact of comment history disclosure on online comment posting behaviors. ***Information Technology & People*** (IF=3.879), (ahead-of-print).
- **Jiang, S.**, Abdalla, H. B., Bi, C., Zhu, Y., Tian, X., Yang, Y., & Wong, A. (2022). HNOXPred: a web tool for the prediction of gas-sensing H-NOX proteins from amino acid sequence. ***Bioinformatics*** (IF=6.931), *38*(19), 4643-4644.
- **Jiang, S.**, Jia, J., Yuan, Y., Wu, Y., & Wang, T. (2021, November). Research on China's Primary Industry: Evidence From Regional Analysis Based on SVM and Moran's Index. **In *2021 IEEE 7th International Conference on Cloud Computing and Intelligent Systems (CCIS)*** (pp. 1-8). IEEE.
- Zheng, S., Wu, Y., **Jiang, S.**, Lu, C., & Gupta, G. (2021, July). Deblur-yolo: Real-time object detection with efficient blind motion deblurring. **In *2021 International Joint Conference on Neural Networks (IJCNN)*** (pp. 1-8). IEEE.

FEATURED EXPERIENCE

Chongzhi Zang Lab, University of Virginia, *Charlottesville, VA* **Jan. 2023 – Present**

Research Assistant **Supervisor**: Dr. Chongzhi Zang

The Center for Systems Science and Engineering, JHU, *Baltimore, MD* (GitHub: Koudou) **Sep. 2022 – Present**

Research Assistant **Supervisor**: Dr. Kimia Ghobadi, Dr. Anton Dahbura & Dr. Claus Aranha

- Developed and maintained an **agent-based simulation system** for imitating pandemic spreading during a disaster evacuation.
- Adopted **object-oriented programming** of **Python** to create new features and actions for agent classes under various situations.
- Introduced and integrated mask-wearing behavior and false negative PCR test modules into the simulation model, ran the simulation and compared the infection results under different PCR test expiry duration, agent mask-wearing intentions, etc.
- Constructed an interactive **web application** for result integration and visualization using the Python frontend framework **Dash**.
- Deployed the simulator model on remote clusters with **SSH**, and gave **tutorial talks** on the Dashboard app and new proposed features.

Alibaba Cloud Intelligence – PolarDB Cloud Products & Services, *Hangzhou, China* **Jun. 2022 – Aug. 2022**

Software Engineer Intern **Mentor**: Mr. Jiabang Pan

- Rewrote the official JDBC driver for **MySQL** to customize a general **PolarDB JDBC driver** to achieve functions of automatic recognition and connection among a master cluster and slave clusters when mastering failovers or master exchanges.
- Implemented the **clustering management of ShardingSphere-Proxy** based on PolarDB, built a **persistence module**, and developed a **listening mechanism** detecting files including updating, adding, and changing by constructing **closure tables** and **polling strategy**.
- Tested the functionalities using **JUnit** and **Mockito**, and published a **technical design document** and a **sharing talk** internally.

Institute of Automation, Chinese Academy of Sciences, *Beijing, China* **Sep. 2021 – Aug. 2022**

Algorithm Research Assistant **Supervisor**: Dr. Zhen Shen

- Developed a **futures data batch process algorithm** to process financial data of multiple dimensions for 30 GB.
- Designed a **high-frequency back-testing algorithm** and packaged the code as a **Python** library for convenient further research usage.
- Experimented on full market trading data and drafted a full experimental report in collaboration with Hantak Investment Advisors.

Wenzhou Municipal Key Lab for Applied Biomedical and Biopharmaceutical Informatics, *Wenzhou, China*

(GitHub: HNOXPred) Website Link: https://www.hnoxpred.com/ **Aug. 2021 – Jul. 2022**

Research Assistant **Supervisor**: Dr. Aloysius Wong

- Developed a user-friendly web server HNOXPred, as a tool for the prediction of gas-sensing H-NOX proteins from amino acid sequence input, using **MySQL** as the online database and **Flask** as the backend.
- Designed a **double sliding window sequencing algorithm** to locate every fitted sequence and calculate its physicochemical properties and assigned confidence scores based on a database of H-NOX proteins, and output calculated properties as **JSON** files.
- Deployed the server on the cloud using **Nginx**, and contributed to algorithms and diagrams written part of the paper as the first author.

CBPM, Wenzhou-Kean University, *Wenzhou, China* (GitHub: Web-Crawler) **Dec. 2020 – Jun. 2021**

Research Assistant **Supervisor**: Dr. Jong Min Kim

- Wrote Python web crawler programs to collect detailed information on more than 2,000 hotels in New York City and London including customer reviews from the two travel websites (TripAdvisor and Booking), with the data volume reaching 20 GB.
- Performed data cleaning and wrangling from different dimensions to make the format of data suitable for further analysis.
- Assisted in result analysis and literature review.

CNN for Visual Recognition Research, *Wenzhou, China* **Nov. 2020 – Apr. 2021**

Research Assistant **Supervisor**: Dr. Gaurav Gupta

- Assisted in the integration of DeblurGANv2 and YOLOv3 under PyTorch framework, proposed as the Deblur-YOLO algorithm, the proposed model achieves competitive performance against several state-of-the-art image deblurring models.
- Completed an algorithm of image motion blur, and conducted deblur tests on about 2,000 pictures used for validation.
- Achieved a SOTA inference time of 0.0772s, mAP of 47.5%, PSNR of 23.94, and SSIM of 0.817 at the blurred COCO 2014 dataset.

Newford Research Institute of Advanced Technology, *Wenzhou, China* **Sep.2020 – Dec.2020**

Data Analyst Intern

- Participated in the Data China project, including the Data China dimension and the Statistical Yearbook of the provinces of China.
- Wrote Python programs of more than 500 lines for dealing with the Excel files collected in batches according to the requirements.
- Cleaned different types of data and completed a data analysis report with visualization and textual presentation.

SOFTWARE ENGINEERING PROJECT

Group Full Stack Project: Tavern, A Job Networking Application (JHU EN.601/621) GitHub: Tavern

- Constructed a website for career networking using **SpringBoot** and **MyBatis** as the backend and **React.js** as the frontend.
- Managed the frontend data with **Redux** and built the interactive website with **Bootstrap** and **Material UI** frameworks.
- Developed functions like posting, commenting, rating, and matching systems for the participants to reserve a meeting as groups or individuals, **Hungarian algorithms** are used to match teams based on participants' basic information.
- **MySQL** database is used for data storage, and the web server is deployed using **Nginx** and **AWS**.

LEADERSHIP EXPERIENCE

Member of Johns Hopkins University Chinese Varsity Soccer Team *Oct. 2022 – Present*

- Champion of *North America Chinese Alumni Cup VII* and *Penn Invitational Soccer Tournament*.

Captain of Wenzhou-Kean University Varsity Soccer Team *Jun. 2021 – Jun. 2022*

- Managed the university's soccer team and coordinated the work of a professional soccer coach from Brazil.

Member of Wenzhou-Kean Business Analytics Lab *Jan. 2021 – Jun. 2022*

- Teaching assistant for MGS 3001 – Python Programming for Business.
- Teaching assistant for MGS 3101 – Foundation of Business Analytics.
- Teaching assistant for Data Analysis Bootcamp Series – R.
- Managed and conducted daily research activities.

Volunteer Teacher of Soccer *Feb. 2019 – May. 2019*