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: 3.702

RESEARCH INTEREST

- Computational Biology, Bioinformatics, RNA-seq;
- Healthcare System, Artificial Intelligence, Software Engineering;

TECHNICAL SKILL

Language: Java, Python, R, Golang, C/C++, JavaScript, HTML/CSS, MySQL, Redis, MongoDB.

Development Toolkit: Linux/Unix, Git/GitHub, Bash, SSH, Docker, Maven, Gradle, Nginx, LaTeX.

Framework: Spring Framework, MyBatis, Flask, ZooKeeper, Spark, ShardingSphere, JUnit, Mockito, UnitTest.

Frontend Framework: React.js, Angular, Dash, Redux, Bootstrap, Material UI.

PUBLICATION

- **Jiang, S.**, Kim, H., Tanaka F., Aranha, C., Ghobadi, K., & Dahbura, A. Simulating disease spreading during disaster scenarios. **In *ALIFE 2023: The 2023 Conference on Artificial Life***. MIT Press. (Working paper)
- 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)
- Shoaib, M., **Jiang, S.**, Jin, L., Fitzpatrick, D. & Pitt, L. (2023). 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. (Under Review)
- 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 School of Medicine, *Charlottesville, VA* **Jan. 2023 – Present**

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

- Working in the field of computational biology and functional genomics.
- Learned R and statistics in bioinformatics, studied bioinformatic theories and skills like RNA-seq, ChIP-seq, motif finding, etc.

Dr. Ghobadi's Lab, Johns Hopkins Whiting School of Engineering, *Baltimore, MD* **Sep. 2022 – Present**

Research Assistant (GitHub: Koudou) **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.
- Introduced and integrated mask-wearing behavior and false negative PCR test features 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** to analyze infection, evacuation and agents' location under different scenarios using the Python frontend framework **Dash**, the dashboard supports to upload three model results for comparative analysis.
- Deployed the model on **remote clusters**, attended weekly meetings, and gave **tutorial talks** on the new developed features and tools.

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 trading algorithm** and pack the code as a package for further experimental analysis.
- 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.

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.

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 Language.
- Managed and conducted daily research activities.