Yiyang Bian

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Education

2024 – Present — Ph.D. in Computer Science, University of California, Riverside – Riverside, CA
2021 – 2024 — M.S. in Computer Science, Case Western Reserve University – Cleveland, OH
2017 – 2021 — B.S. in Computer Science, Central China Normal University – Wuhan, China

Research Interests

Areas: Spatial Data Management, Query Optimization, Information Retrieval, Machine Learning, LLMs

My research focuses on spatial data management, optimizing query processing and retrieval efficiency in large-scale spatial-temporal datasets, with considerations for integrating Large Language Models (LLMs) to enhance spatial information retrieval.

Employment History

2022.3 – 2024.8 — **Software Engineer Intern**, *BioInVision Inc.* Cleveland, OH, USA

- Developed and deployed a comprehensive **web-based service** to transform the company's **2D/3D biomedical imaging data** into an interactive Web Service, significantly enhancing collaboration efficiency with end-users.
- Utilized **Python Flask** for back-end development, ensuring seamless data processing and API integration, while leveraging **JavaScript** and **React** for the front-end to deliver a responsive and user-friendly interface.
- Integrated **Azure Cosmos Database** as the cloud database solution, enabling scalable and secure data storage and retrieval for high-volume biomedical image datasets.
- Implemented advanced 3D image manipulation features (rotation, scaling, translation) using **Web Gl**, allowing users to intuitively interact with model scanned images for real-time feedback and analysis.

2021.1 – 2021.7 — **Software Engineer Intern**, *Kingsoft Cloud*. Beijing, China

- Contributed to the **Smart City Beijing** project by processing and organizing over **100,000 municipal Excel and Word files**, enabling efficient data storage and analysis for government departments.
- Developed back-end services using **Java** and **Spring Boot**, automating data extraction, transformation, and integration with Kingsoft Cloud **MySQL** and **SQL Server**.
- Designed **RESTful API** to support seamless front-end integration, enabling real-time data visualization and analytics for smart city applications.
- Optimized back-end performance with **MyBatis Plus** for database operations and **Maven** for streamlined dependency management, improving development efficiency and scalability.

Research Publications

- M. Wang, H. Ma, **Y. Bian**, et al., "Generating Skyline Datasets for Data Science Models" in *International Conference on Extending Database Technology (EDBT)*, 2025. **[View Online]**
- **Y. Bian**, "EXTENDING COLLABORATIVE FILTERING FOR MACHINE LEARNING MODEL RECOMMENDATION" in *OhioLink*, 2024. **[View Online]**
- M. Wang, S. Guan, H. Ma, S Guan **Y. Bian**, et al., "ModesNet: Performance-Aware Top-k Model Search Using Exemplar Datasets," in *Very Large Data Base Endowment Inc (VLDB)*, 2024. **[View Online]**
- M. Wang, S. Guan, H. Ma, **Y. Bian**, et al., "Selecting top-k data science models by example dataset," in *Proceedings of the 32nd ACM International Conference on Information and Knowledge Management (CIKM)*, 2023. **[View Online]**
- M. Wang, H. Ma, A. Daundkar, S Guan, **Y. Bian** et al., "Crux: Crowdsourced materials science resource and workflow exploration," in *Proceedings of the 31st ACM International Conference on Information and Knowledge Management (CIKM)*, 2022. **[View Online]**

Skills

Programming Languages	Python, Java, C++, JavaScript, C, MATLAB
Databases	Mysql, PostgreSQL, SQLSever, MongoDB.
Web Dev	Spring Boot, MyBatis Plus, Maven, Azure
Tools & Frameworks	HTML, CSS, JavaScript, Apache Web Server, Tomcat Web Server.
Data Analysis & Machine Learning	Hadoop, Spark, TensorFlow, PyTorch, Scikit-learn