YIFAN XU

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Education

University of Illinois at Urbana-Champaign   **Aug. 2024 – May 2026**
Master Science in Information Management   *Champaign, Illinois*

ShanghaiTech University   **Sep. 2020 – June 2024**
Bachelor of Engineering in Computer Science   *Shanghai, China*

Experience

Tektronix, Inc   **Sep. 2023 – Jan. 2024**
Software Development Engineer Intern   *Shanghai, China*

- Joined the Digital Transformation Department that develops internal tools, improving data accessibility and decision-making efficiency for finance, sales, and other departments.
- Developed a supplier management application using **Power Apps**, enabling finance staff to register, add, delete and find suppliers, and increased approval efficiency by automating the submission of supplier approval requests and reminders to finance staff, standardizing form formats.
- Developed **RESTful APIs** using **Power Automate** to manage CRUD operations for supplier data and transmit processed data to downstream financial services for final processing, leveraging **SharePoint** and **Microsoft SQL** for data storage.
- Developed a system using **Python** to automate the processing of daily bank receipt emails for the finance department by fetching receipt data from Outlook email attachments, removing unnecessary fields, and transforming it into Excel format.
- Fetched sales data from **Sharepoint** and visualized a daily report of sale performance to managers using **Power BI**.

ShanghaiTech University   **Feb. 2023 – Jan. 2024**
Undergraduate Research Intern   *Shanghai, China*

- Invented new super resolution and 3D reconstruction techniques to enhance the precision and speed of controlling nanorobots, typically observed under a Scanning Electron Microscope (SEM), where imaging quality and speed are inversely related.
- Achieved rapid reconstruction of nanotubes captured under SEM by modifying the Neural Radiance Field's pinhole imaging model to parallel projection using **Pytorch**, aligning it with the physical imaging process of SEM, improving average PSNR from 22.3 to 28.13.
- Conducted extensive research on blind and non-blind super-resolution methods, from classification to application scenarios, and authored a comprehensive review paper.

Projects

Jobnow - Full Stack Job Application Management System | *MongoDB, Express, React, Node.js*   **September 2024**

- Developed "Jobnow," a full-stack application using the **MERN** stack (**MongoDB, Express, React, Node.js**). The project focused on creating a scalable job management platform, integrating authentication, and data handling.
- Built the front end using **React** with **VITE**, implementing key features such as user registration, dashboards, error handling pages, and integrated with **React Router** for routing between pages.
- Implemented RESTful APIs using **Node.js** and **Express** to handle request handling, data validation, error management, and pagination, storing job and user data in **MongoDB**.
- Implemented secure authentication and authorization using **JWT**. Features included password hashing, login/logout functionality, protected routes, and user role management.

Publications

[1] Xiang Fu, **Yifan Xu**, Hu Su*, Song Liu, "NanoNeRF: Robot-assisted Nanoscale 360° reconstruction with neural radiance field under scanning electron microscope", in *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)* and Selected by **Oral Representation**, Abu Dhabi, Oct. 2024.

[2] Ying Li, **Yifan Xu**, Hu Su, and Song Liu, "A Review of Deep-learning-based Super-Resolution: from methods to applications", in *Pattern Recognition*, paper id: 10.1016/j.patcog.2024.110935.

Technical Skills

Languages: Python, C++, Java, C, HTML/CSS, JavaScript, SQL, Markdown, Shell, R, MATLAB, RISC-V
Developer Tools: Docker, AWS, Kubernetes, VS Code, Linux/Unix, MySql, Microsoft SQL, MongoDB, PostgreSQL
Technologies/Frameworks: Flask, Django, Spring Boot, GitHub, Node.js, React, Cmake, Numpy, Pytorch, Mongoose, Express, Excel, Flink, Hadoop, Spark, OpenStack