Xiang Hao
Wilmington, DE 19806 | xianghao98520@gmail.com | LinkedIn: Xiang Hao | GitHub: Xiang Hao

EDUCATION

MS in Computer Science Sep 2022 - Jun 2024
University of California, Davis **GPA: 3.67**
Relevant courses: Data Visualization, Computer Engineering, Software Programming

BS in Computer and Information Science Mar 2019 - Jun 2022
University of Oregon **GPA: 3.73**
Relevant courses: Interned Data Structure, Interned Algorithm, Database Programming, Multi-agent System

TECHNICAL SKILLS

- **Programming Languages:** Python, Java, JavaScript
- **Frameworks & Library:** PyTorch, NumPy, Pandas, PyTest, PySpark, D3.js, FastAPI, Temporal, Tkinter, Matplotlib, OpenPyXL, OpenCV, React
- **Toolkits & Databases**: Docker, AWS (S3, ECS), GitHub, CI/CD, Azure, Grafana, Jaeger, Kafka, PostgreSQL, SQL, Jupyter, Kubernetes

PROFESSIONAL EXPERIENCE

EDA Clinical Pennsylvania, United States
Software Engineer Jan 2025 - Present
Project: Time Tracker

- Engineered a dual-interface web app using **FastAPI** and **JavaScript**, ensuring seamless developer/admin portals integration while leveraging **Azure** auto-scaling infrastructure to handle **500+** daily time records.
- Designed and implemented automated workflows, including timesheet approval, CSV export reports, and real-time conflict detection, leading to a **60% faster approval cycle** and **75% error reduction**.
- Strengthened system security with **JWT/OAuth2 authentication**, **role-based access control (RBAC)**, and **client-side encryption**, ensuring compliance with data privacy requirements and access control policies.
- Developed a **responsive, offline-first UI** with native **JavaScript** and local storage caching, enhancing usability for remote teams and ensuring smooth operation across multiple time zones.

EDA Clinical Pennsylvania, United States
Software Engineer Intern Oct 2024 – Jan 2025
Project: Dataset-JSON Viewer and Explorer

- Streamlined data transformation and format standardization using **Python Pandas** for data cleaning and transformation and **OpenPyXL** for generating .xlsx files based on detailed specification files, ensuring complete compliance with data requirements and reducing manual errors.
- Automated data pipelines by designing and implementing a **Python-based** solution using **json** and **PyYAML** libraries to convert structured .xlsx files into .json format, incorporating essential metadata for compatibility with dataset-JSON viewers and improving data accessibility.
- Enhanced JSON viewer functionality by leveraging **Flask** and **Plotly/Dash** to build a web-based dataset-JSON viewer, enabling real-time interaction, seamless exploration of complex datasets, and improved user engagement through dynamic visualizations.
- Delivered comprehensive documentation and presentations using **Markdown** and **Jupyter Notebooks** to ensure cross-functional understanding of the data transformation process while resolving technical challenges using **NumPy** and **PyTest** for debugging and validation.

HRG International Institute (Hefei) of Research and Innovation Anhui, China
Software Engineer Intern Jul 2021 - Sep 2021
Project: Factory's equipment/construction safety automation detection system

- Reduced 30 hours of manual work per day by automating the safety detection framework with computer vision in **Python**, utilizing **PyTorch** for machine learning, **Kafka** for data pipeline, and **AWS S3** for storage.
- Reduced safety violations by **1.2%** and eliminated **3%** incidents through real-time data monitoring and alert systems using **ResNet-50**, **OpenCV**, and **Kafka**, ensuring high data accuracy and reliability.
- Enabled fast same-day deployment by streamlining the **CI/CD** pipeline with **Github actions**, **dockerized** contain runs, and blue/green deployment in **AWS ECS**.
- Outlined a potential **6% productivity improvement** through pioneering a performance evaluation pipeline and presented the findings to three department heads.

Shanxi Yunlv Tianxia Network Technology Co. Ltd. Shanxi, China
Software Engineer Intern Jan 2021 - Mar 2021
Project: Internal SaaS travel agency system

- Improved employee satisfaction and saved hours of manual work by automating business expense approval and ticketing systems using **FastAPI** for API and **Temporal** in **Python** for workflow orchestration. Deployed and scaled applications using **Kubernetes**, ensuring efficient resource utilization and high availability.
- Ensured **100%** reliability by enhancing product observability using metrics and alerts implemented with **Prometheus**, **Grafana**, and **Jaeger**.
- Supported company-wide rollout to **6 departments**, which support **over 1200 employees** for traveling and business expenses by resolving customer issues, giving presentations, and writing comprehensive documentation.

Shanxi Anxin Hengchuang Robot Tech Co. Ltd. Shanxi, China
Software Engineer Intern Jul 2020 – Sep 2020
Project: Warehouse robot fleet management

- Saved **$40,000** per year by drastically reducing the collisions between robots by integrating laser sensors and reinforcement learning course correction algorithms using **Pytorch** in **Python**.
- Enhanced on-time delivery rates by **2%** through early detection of destination mismatches by building a province-to-postal ID index using **OpenCV** in **Python** and **SQL** for storage.
- Boosted the robot fleet **efficiency by 1%** by reducing the charging wait time by preemptively scheduling robots to charge by **streaming** the battery life using **Kafka** and computing priorities with **Java**.