

Ke Xu

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WORK EXPERIENCE

Ant Group | *Algorithm Engineer Intern @ Machine Intelligence Department* Jun. 2023 - Sep. 2023

- **Fraud Detection Oracle (FDO)** | *A Text Feature Vector Retrieval and Representation Learning Based Model for Risk Control*
 - Implemented GNN / LLM based model to generate financial data in **PyTorch**, enhancing groundtruth and mitigating privacy concerns.
 - Implemented **MongoDB** database for storing and retrieving financial transaction data for anti-money laundering (AML).
 - Configured dependencies and virtual server, deployed the Model as a Service (**MaaS**) on **AWS Lambda** with **Docker**.
 - FDO now achieves a **6.2%** increase in accuracy compared to the previous strategy-based version, with **1.5x** faster processing.
- **AntGLM (10B)** | *A Large Language and Multimodal Model for Ant Group's Business Ecosystem*
 - Deployed AntGLM with **Docker**, implemented API services with **Flask** and **Django**, and adopted **Grafana** for API access visualization.
 - Conducted functionality QA tests with **JUnit**, **Postman**, **Apache JMeter** and **10+** model services (including FDO) on **Ant Cloud**.
 - Constructed a **CI/CD** pipeline for releasing functions including version control, automated testing and data monitoring with **Grafana**.
 - AntGLM (10B) now supports **10+** Business Units, and provides **20+** tools for risk control with an average response time within **100ms**.

ZheShang Securities | *Data Engineer Intern @ Investment Strategy Department* Mar. 2023 - May. 2023

- Implemented database schema and utilized **C++** to retrieve and update stock market data for ZheShang clients in the database using **SQL**.
- Optimized database performance by employing advanced query optimization techniques in **SQL**, reducing query execution time by **31.9%**.
- Conducted factor analysis research, proposed **5+** factors and backtested using **Python** with **10+** years historical **CSI 300/1000** data.
- Developed multi-factor models for trading in **Python**, and created business reports for ZheShang Research Department.

State Street | *AI Engineer Intern @ Automation & Artificial Intelligence Group* Nov. 2022 - Feb. 2023

- **FileWatcher** | *A Real-Time Monitoring and Management System for File-Based Data Processing and Integration Workflows*
 - Developed a **Python SDK** integration to transfer files for anomaly detection with **Kafka** client, **Amazon S3** storage client.
 - Implemented a dashboard for data visualization with **JavaScript**, **React.js**, and **HTML/CSS**, enhancing decision-making processes.
 - Applied **Kafka** to dump service overload metrics into **MySQL** and displayed the dashboard by **React** and **Flask**.
 - Filewatcher now supports **100+** business partners to monitor in real-time, reduces latency by **68.1%** and increases IOPS by **173%**.
- **MannualMatch** | *An AI-Powered Automated Reconciliation System for Investment and Risk Management*
 - Designed algorithms to automate the reconciliation process and implemented the baseline model in **Java**.
 - Achieved a **17.3%** increase in accuracy by fine-tuning the model with large volumes of real transaction and account data.
 - Automated the deployment of **20+** containerized microservices to **Kubernetes** using **Helm**, **Terraform**, and **Docker**.
 - MannualMatch now handles a **294%** increase in transaction volume, reduces processing time by **63.2%**, reduces error rate to just **3.5%**.

University of Illinois at Urbana-Champaign | *Advisor: Prof. Hanghang Tong* May. 2022 - Aug. 2022

- **ALKGQA** | *An Active Learning Based Knowledge Graph Question Answering Model for Multi-hop Question*
 - Implemented graph centrality, information density, and uncertainty measures for nodes selection with **Tensorflow** in **PyTorch**.
 - Completed the knowledge graph by incorporating QA data from **Azure Blob Storage** and visualized with **NetworkX** and **Graphviz**.
 - ALKGQA now achieves up to **18.6%** savings of training data and **37.5%** savings of training time with the state-of-art performance.

Scietrain (Westlake Xincheng) | *Advisor: Dr. Zhenzhong Lan* Jul. 2021 - Sep. 2021

- **XiaoTian** | *An AI-Assisted Psychological Counselling Chatbot*
 - Collaborated to align key psychological concepts with knowledge graphs in **Python** with **Neo4j** and **Owledready2**.
 - Containerized **BERT** based model with **Docker** and deployed with **Kubernetes** on the computing clusters from **Aliyun Cloud**.
 - Developed a WeChat Mini Program with **JavaScript** and **HTML/CSS** for frontend, **Express.js** and **Flask** for backend.
 - XiaoTian now has provided **free** psychological counseling services to **150K+** users through the WeChat Mini Program XinLing.

EDUCATION

University of California, San Diego (UCSD) | *La Jolla, CA, USA* Sep. 2023 – Jun. 2025 (Expected)

- *Master of Science (M.Sc.) in Computer Science* | GPA: -/4.0

University of Illinois at Urbana-Champaign (UIUC) | *Champaign, IL, USA* Sep. 2019 – May. 2023

- *Bachelor of Science (B.Sc.) in Electrical Engineering, Minor in Computer Science* | GPA: 3.75/4.0 | Graduated with High Honors

Zhejiang University (ZJU) | *Hangzhou, Zhejiang, China* Sep. 2019 – Jun. 2023

- *Bachelor of Engineering (B.Eng.) in Electrical Engineering and Automation* | GPA: 3.91/4.0 | Outstanding Graduate

SKILLS

- **Programming Languages** Assembly, C, C++, CSS/HTML, Go, Java, JavaScript, Kotlin, PHP, Python, Scala, Solidity, Swift
- **Frameworks & Tools** Agile, Angular, Bootstrap, CUDA, Django, Docker, Figma, Flask, Git, Gradle, IntelliJ, JMeter, JUnit, Kafka, Keras, Kubernetes, Matplotlib, Maven, Node.js, Postman, PyTorch, React, scikit-learn, Scrum, Spark, Spring, TensorFlow
- **Cloud & Databases** AWS, Azure, GCP, MongoDB, MySQL, Wind EDB