

# Ke Xu

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## WORK EXPERIENCE

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

- **Fraud Detection Oracle** | *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** | *A Large Language and Multimodal Model for Ant Group's Business Ecosystem*
  - Integrated AntGLM model with **LangChain** framework, customized the Agents and ZH/EN prompts to enhance the **ReAct** ability.
  - Conducted functionality QA tests with **JUnit**, **Postman**, **Apache JMeter** and **10+** model services (including FDO) on **Ant Cloud**.
  - Fine-tuned the AntGLM model in **PyTorch**, resulting in a **30.8%** improvement while performing automatic tool selection and QA.
  - 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**.
- Conducted factor analysis research, proposed **5+** factors and **backtested** using **Python** in **10+** years historical **CSI 300/1000** data.
- Analyzed the performance of different factor combinations using **Python** and performed data visualization using **Matplotlib** and **seaborn**.
- 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.
  - 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**.
  - Conducted rigorous testing and validation with **JUnit** to ensure reliable performance and compliance with predefined rules.
  - Achieved a **17.3%** increase in accuracy by fine-tuning the model with large volumes of real transaction and account data.
  - 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.
  - This work is funded by National Science Foundation (**NSF-1947135**) as part of Research Experience for Undergraduates (**REU**) program.

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

- **XiaoTian** | *An AI-Assisted Psychological Counselling Chatbot*
  - Addressed **conversational safety** issues in our **BERT**-based AI dialogue systems to enhance user experience and ethical awareness.
  - Collaborated with psychologists to align key concepts with **knowledge graphs**, and design emotional & technical **labeling systems**.
  - Developed personalized **user portraits** with psychological assessment and personality tests, enabling accurate diagnosis and treatment.
  - 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