XIANG LI

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EDUCATION

Carnegie Mellon University Pittsburgh, USA
Master of Science in Information Networking Jun 2025 - May 2027
- **GPA: 4.0/4.0**; **Coursework:** Intro to Deep Learning, Distributed Systems, Principles of Software Construction

Huazhong University of Science and Technology Wuhan, China
Bachelor of Engineering in Information Security Sep 2021 - Jun 2025
- **GPA: 91.4/100 (Top 5%)**; **Main Honors:** Outstanding Graduate & Excellent Student Leader & School-level Merit Student

SKILLS

Programming Language: Python, C/C++, Go, Java, JavaScript, Shell scripting (Bash), SQL
Web Development Techniques: Django, Flask, FastAPI, RESTful APIs, WebSocket, AJAX, HTML, CSS, React
Framework and Library: Qt, Microsoft Detours, Raft, Thrift, Netfilter, PyTorch, Numpy, LangChain, RAG, Playwright
Tools and Platform: Docker, Kubernetes, Nginx, Wireshark, LLaMA Factory (Fine-tuning), vLLM, Linux, Kafka, Git, GCP, AWS
Database Technology: Redis, MySQL, PostgreSQL, MongoDB, ElasticSearch, Distributed Database System, FAISS

PROFESSIONAL EXPERIENCE

Research Assistant, IoTSP Lab led by Prof. Wei Zhou from HUST Sept 2024 - Jun 2025
Project: LLM-Based Gray-Box Firmware Emulation Tool (Gemu)
- Developed an **Agent-driven** pipeline in **LangChain**, ingesting MCU manuals via OCR & Vision LLMs and normalizing functional, register, and address-field data into a unified schema, processing manuals in **80-100** pages/hour
- Orchestrated a **RAG** stack with **FAISS** and sentence-transformers embeddings, applying **prompt engineering** for rule-grounded retrieval and synthesis, achieving **74.7%** coverage of reference rule sets with **87.4%** rule-level correctness
- Engineered **CoT** workflows to translate natural-language specs into rules through entity standardization and logical atomization

Software Development Engineer, Shanghai Zhikai Ruitu Education Technology (Startup) Dec 2024 - May 2025
- Architected and deployed a study-abroad school & program information platform using **Flask**, **MongoDB**, and **Elasticsearch**-powered search; designed scalable backend services, **RESTful APIs**, and data models managing **50,000+** program records, and integrated LLM-powered APIs for document analysis, query understanding, and personalized program recommendations
- Engineered an application-assist **Agent** with **LangChain** and **Playwright**, using **LLM** to parse DOM trees and automate university application form filling across **30+** portals, including standardized test score submissions, achieving **90%** success rate

Back-end Development Intern, Topsec Technologies Group Mar 2024 - May 2024
- Maintained a toolbox on **Django**, validating and fixing **30+** test-reported defects, implementing client-request feature, and extending **RESTful APIs** to provide unified interface for diverse firewall models, cutting management overhead by **~30%**
- Contributed to LLM-powered firewall configuration optimization and log analysis project, handling open-source model research and deployment: **fine-tuning** with LLaMA Factory to improve **tool-calling** accuracy by **~12%**, accelerating inference with **vLLM** (**25%** inference latency reduction), and implementing **OpenAI-Style API** for seamless integration

ACADEMIC PROJECTS

TinyKV — Distributed Key-Value Database (Code) | Go, Raft, KV Storage, Distributed Systems Jul 2024 - Aug 2024
- Built a distributed KV store in **Go** with single-node storage engine foundation, then implemented **Raft** consensus protocol and cluster management achieving **98%** availability: leader election, dynamic node add/remove, leadership transfer, and region splitting
- Engineered log and scheduling subsystems, including **log compaction** and **snapshotting**, reducing log size by **70%+** during steady state; coordinated resource/task scheduling to sustain **100K+** ops/sec throughput under benchmark load

Software Behavior Analysis System Based on API HOOK (Code) | Qt, Detours, DLL, IPC Feb 2024 - Mar 2024
- Built a 32-bit DLL with Microsoft **Detours** to hook **WinAPI** calls for system monitoring: MessageBox, memory operations, file I/O, registry edits, and network activities, achieving **98.2%** interception accuracy across **15+** critical system APIs
- Developed a **Qt** GUI with multi-process IPC via named pipes to visualize intercepted events, achieving **10,000+** events/second display with **<50ms** latency, sub-millisecond data transfer, and customizable filtering for **20+** event categories