

Pengcheng Xu

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Education

University of California, Irvine

September 2025 – December 2026

Master of Software Engineering

GPA: 3.97 / 4 (Ranking Top 10%).

Technical Skills

Languages: Java, Swift, Python, Go, C++, JavaScript, SQL

Backend & Frontend: Spring Boot, MyBatis, REST APIs, Gin, Gorm, React, SwiftUI, Vue, NodeJS

Databases & Search: MySQL, PostgreSQL, MongoDB, Redis, Elasticsearch

AI & Data Tools: Codex, Claude Code, OpenClaw, PyTorch, TensorFlow, Hugging Face, Kaggle, LM Studio

DevOps & Tools: Linux, Git, Docker, Kubernetes, Postman, Nginx, Dialogflow

Work Experience

Yiwu Peisha Network Technology Company

September 2023 – September 2024

Backend Developer Intern

Yiwu, China

- Engineered backend modules for Material Inquiry System using Java/Spring Boot and MySQL, **reducing query latency by 40%**; the system now **supports 10k+ users** with improved performance.
- Built CRUD operations and REST APIs for Product Library, **improving reliability by 30%**.
- Enhanced existing price trend **visualization module and API**, **reducing latency by 20%** and improving the responsiveness of the user interface, and empowering traders to make faster decisions.

Projects

DevPulse - AI-Assisted Enterprise RAG Platform | Full-stack Development, Claude code, Kafka, Redis, PostgreSQL

[GitHub](#)

- Designed and implemented a retrieval-augmented generation (RAG) system combining **dense embeddings (pgvector)** with **sparse retrieval (BM25) and Reciprocal Rank Fusion (RRF)**, improving **Recall@5 by 23%** on a **50K-document corpus**.
- Developed a distributed, multi-service architecture with a **Java (Spring Boot) API layer and Python FastAPI AI worker**, decoupling request handling from LLM inference and enabling independent scaling.
- Implemented real-time messaging with **Redis Pub/Sub** to bridge backend inference and frontend streaming, ensuring low-latency delivery of generated responses.
- Applied **AI-assisted development workflows** (multi-agent coding, design-to-code pipelines) to accelerate prototyping and maintain consistency across a **multi-service codebase**.

DeepNews-LLM Fake News Analysis Platform | Python, FastAPI, LangChain, MongoDB

[GitHub](#)

- Developed an AI-driven fake news analysis system with **FastAPI and LangChain**, achieving **90%+ accuracy and 40% lower latency** via asynchronous streaming.
- Assembled a modular agent framework with **Pydantic models and dynamic tool routing**; cut model-call overhead by 35%.
- Implemented Selenium extraction with queued crawling, rate limiting, boilerplate removal, and AHP ranking; consistently processed **1K+ articles per batch** with **<5% variance** across re-runs.

Blockchain-based Carbon Trading System | Blockchain, Cryptography, Go, Full-stack Development

[GitHub](#)

- Led a 5-member team in architecting a **permissioned blockchain** solution utilizing Chang'an Chain, achieving a **25% increase** in network throughput and enabling processing of **over 500 transactions per second**, improving scalability.
- Optimized **block verification algorithms**, reducing average query latency **by 35%** through refined block indexing and efficient data structure implementation, resulting in a database enhancement.
- Secured data with **ECDSA, SHA-256, and AES encryption**, ensuring secure and tamper-proof data transactions.

Focuspace - Intelligent Photography Composition App | SwiftUI, AVFoundation, Vision, FoundationModels

[GitHub](#)

- Built an intelligent iOS camera app with **9 built-in composition templates and real-time framing overlays**, reducing average shot adjustment time **by 35%** through instant visual guidance and smart reframing prompts.
- Engineered a Vision-based subject tracking pipeline integrating **face analysis, object tracking, and stabilization logic**, improving subject-lock consistency **by 28%** and reducing overlay jitter **by 40%** during live preview.
- Designed a **hybrid AI composition coach** combining rule-based scoring with on-device **Foundation Models**, increasing recommendation stability **by 32%** and improving overall shooting efficiency **by 22%**.

Award & Certifications

First Prize in Service Outsourcing Innovation and Entrepreneurship Competition for Chinese College Students

Aug 2024

China National Scholarship (Top 1% in the University)

Nov 2024

Second Prize in 2023 Mobile Application Innovation Competition

July 2023

App Development with Swift Associate by Apple (International Certification)

Sept 2023