

# PEIKE XU

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## EDUCATION

### Carnegie Mellon University

Mountain View, CA

*Master of Science in Software Engineering*

*Aug 2025 – Dec 2026*

- **Teaching Assistant:** Led weekly discussion sections and office hours for **Machine Learning**, fostering a collaborative learning environment and helping students build a strong foundation
- **Coursework:** Foundation of Software Engineering, Functional Programming

### University of California San Diego

La Jolla, CA

*Bachelor of Science in Computer Science, Double Major in Mathematics (3.73/4.0)*

*Sep 2021 – Jun 2025*

- **Instructional Assistant:** Tutored 150+ students for AI Algorithms and Calculus courses, clarifying core concepts and assisting with problem sets to improve understanding and retention
- **Coursework:** Machine Learning, Data Structures & Algorithms, Linear Algebra, Statistics Modeling

## PROFESSIONAL EXPERIENCE

### Welfie — EdTech platform for student wellness

*Jun 2024 – Sep 2024*

*Full Stack Intern*

San Diego, CA

#### I Patient Matching Platform

- Developed a **React-based** patient baseline matching system that utilizes **SVD** collaborative filtering algorithms to generate personalized recommendations for over 2000 patients, achieving 65% recommendation accuracy
- Developed Node.js RESTful APIs that integrated with SendGrid to automate patient notifications, successfully processing healthcare data to deliver personalized healthcare recommendations

#### II Learning Management System

- Deployed a PHP-based LMS on **Google Cloud**, integrating the ChatGPT API to automate content generation and significantly accelerate the course creation workflow for instructors
- Developed and fine-tuned an AI curriculum generator using prompt engineering to create high-quality syllabi and assessments, achieving an 80% instructor approval rate across 50+ topics

### TCT Mobile — Global mobile handset manufacturer

*Jun 2024 – Aug 2024*

*Software Test Engineer Intern (Part-Time)*

Bellevue, WA

- Built automated Android testing framework using Android Debug Bridge (**ADB**) protocols and Python for log analysis, reducing manual testing effort by 25% across core feature testing
- Engineered an automated data processing pipeline for over 20 pressure test scenarios, enabling real-time anomaly detection to identify and flag critical issues within a 4-hour cycle

### Eth Tech — Emerging technology solutions for business

*Oct 2023 – Jan 2024*

*Software Engineer Intern*

Newark, CA

- Developed a microservices-based e-commerce platform using Java Spring Boot, supporting 500+ concurrent users during load testing and enhancing code modularity
- Engineered product search and filtering features with Redis caching, reducing average load times from 1.2s to 800ms

## PROJECTS

### RAG Agent Service

*Jun 2025 – Current*

Developed a B2B **RAG** (Retrieval-Augmented Generation) system on **AWS** to process and query 20+ documents. Implemented semantic text chunking with OpenSearch to achieve 80% retrieval accuracy. Deployed a chatbot interface via API Gateway, enabling document querying with an average response time of less than 3 seconds.

### AI-Powered Smart Receipt & Recipe Platform

*Jun 2025 – Sep 2025*

Developed a smart platform that automates grocery receipt processing and provides personalized meal recommendations. Built a multi-agent system using Claude Code and trained computer vision models on various receipt formats, achieving 75% data extraction accuracy. The system also includes a recipe suggestion engine to help users discover new recipes.

### Emergency Response Chat Application

*Aug 2025 – Dec 2025*

Engineered a real-time crisis communication platform using Node.js and MongoDB. The application, which featured dynamic chat rooms and real-time notifications, was built with Socket.io. Implemented an MVC pattern and JWT authentication to deliver a robust and scalable solution.

## TECHNICAL SKILLS

**Programming Languages:** Python, Java, C++, JavaScript, TypeScript, SQL, PHP, Bash, HTML/CSS

**Frameworks & Tools:** React, Node.js, Spring Boot, Flask, Docker, Jenkins, Git, RESTful APIs

**Cloud & Database:** AWS (S3, Lambda, API Gateway, EC2), GCP, OpenSearch, PostgreSQL, MongoDB, Redis