Jensen Peng

visit my website

‹ Software Engineer /›

Contact

Phone
+61 413993029
+86 15776692817

Github
https://github.com/ArcueidShiki

Email
pjtpengjingtong@gmail.com
pengjingtong@pku.edu.cn

Linkedin
https://www.linkedin.com/in/jingtong-peng-3068672b6/

Address
Burwood, New South Wales

Leetcode
https://leetcode.cn/u/arcueidshiki/

skills

- C/C++
- Bash
- JavaScript
- Python
- Java
- TypeScript
- Linux
- Windows
- Redis
- SpringBoot
- Flask
- Threejs
- Cloudflare
- Swift
- React
- Nextjs
- Vue
- HTML
- CSS
- QT
- MySQL
- Sqlite
- MongoDB
- Git
- Docker
- AWS
- Arduino
- Raspberry Pi

Education

The University of Western Australia
Master of Information Technology
2024-02-14 - 2025-12-17

Peking University
Master of Pharmacy
2019-09-01 - 2021-09-09

Harbin Medical University
Bachelor of Pharmacy
2015-09-01 - 2019-07-03

Language

- English (fluent)
- Chinese (native)

Work Experience

Huawei Technologies Co., Ltd.

2022-09-06 - 2024-02-14

System Engineer

Hiperf (Performance analysis tool)

- Led the development of a large-scale performance analysis and tuning tool for the HarmonyOS platform, with compatibility for **Android**, **Linux**, and other systems. My key responsibilities included spearheading the development of several core modules:
- Perf Event: Implemented performance data collection for CPU cycles, instructions, and other metrics using perf_event_open, mmap, and a RingBuffer.
- CallStack: Achieved precise performance bottleneck identification by stitching together C++/JavaScript call stacks, leveraging DWARF debugging information and Stack Pointer (SP) **unwinding**.
- Symbol File & DWARF: Developed a symbol resolution and debug info compression system by parsing shared libraries and minidebug information.
- RingBuffer & Libreport: Enabled high-concurrency data exchange through shared memory mapping and asynchronous processing threads, while providing a cross-platform dynamic library interface.
- Command-Line Tool: Built a comprehensive command-line tool with help, list, dump, and record subcommands to manage the entire data acquisition, statistics, and report generation workflow.
- Virtual Runtime & Virtual Thread: Maintained process and thread context snapshots to ensure accurate sampling data traceability and call stack association.
- Toolchain Maintenance: Collaborated with an international cross-compilation team to troubleshoot performance bottlenecks and critical errors within the LLVM-based system compiler and kernel.
- Optimizations: Improved CPU efficiency by optimizing 4K Cache Page mapping and enhanced report generation speed by restructuring the Report module and its read/write strategies.
- Testing & Documentation: Wrote automated test scripts (CPU/memory performance tests), system build scripts, and authored design and requirements documents for functional reviews and continuous iteration. Conducted competitive analysis of tools like Simpleperf and Perfetto.

Projects Experience

AuraWell Smart Health Assistant

DevOps

2025-06-01 - present

- An **AI Agent** project focused on creating a smart, personalized health assistant. This project integrated advanced AI and data management solutions to offer comprehensive services, including health consultations, data tracking, and goal setting.
- AI Agent & **RAG** Architecture: Architected a core autonomous agent using the **LangChain** framework, integrating a Retrieval-Augmented Generation (RAG) pipeline. Utilized ChromaDB as a vector store to efficiently retrieve information from a professional health knowledge base, effectively mitigating LLM hallucinations and ensuring the accuracy of health advice.
- Backend: Developed backend services with the **FastAPI** framework, leveraging its asynchronous capabilities to build a low-latency RESTful API.
- Containerization & Deployment: Containerized the entire application using **Docker**, ensuring consistency across development, testing, and production environments. Replaced pip with **uv** for package management, significantly reducing dependency installation time and improving development and CI/CD efficiency.
- Load Balancing & Security: Deployed Nginx as a reverse proxy for traffic management, enhanced API security, and optimized static asset delivery.
- Key Features: Delivered core functionalities, including an AI-driven natural language chat, user profile management, health data tracking, and a personalized goal-setting system.

US Stock Paper Trading Platform

Full Stack Dev

2025-04-03 - 2025-05-10

- Designed and developed a simulated U.S. stock market trading platform with real-time stock data visualization, portfolio management, user chat, and financial data analysis.
- System Architecture Design: Architected the backend using Flask for RESTful APIs and WebSocket for real-time communication.
- Frontend Development: Built a responsive UI with Bootstrap, implemented data visualization with ECharts, and managed dynamic interactions with jQuery.
- Backend Development: Implemented RESTful APIs, a WebSocket-based chat, and a financial data processing pipeline.
- Database Design: Designed a relational database schema for user, financial, and chat data storage using SQLite.
- Performance Optimization: Optimized data queries and WebSocket communication for real-time updates and a smooth user experience.

Smart Entry System (IoT)

Full Stack Dev

2024-09-01 - 2025-10-01

- A smart entry system using IoT and computer vision technologies. The system integrates multiple authentication methods, including **facial recognition** and **infrared** temperature detection, and supports remote management and monitoring.

Technical Highlights:

- Facial Recognition: Implemented an efficient facial recognition algorithm on a **Raspberry Pi** using **OpenCV** and the face recognition CNN model for user authentication.
- Multi-Modal Authentication: Integrated an **infrared sensor** module with facial recognition to provide secure and flexible authentication options.
- Hardware Control: Directly controlled GPIO pins via Python scripts to drive the door lock motor and status lights, enabling physical access control.
- Backend & Frontend: Built the backend using the Flask framework to handle authentication requests, user data management, and access logs. Developed a web-based management interface with **React** for remote configuration and monitoring.
- System Integration: Seamlessly integrated software logic with hardware components (Raspberry Pi, camera, NFC module, motor) to create a fully functional end-to-end IoT solution.

Remote Control Software

Full Stack Dev

2024-12-01 - 2025-01-15

- A self-initiated R&D project to build a remote assistance application for desktop sharing and control.
- Protocol Design: Developed a custom communication protocol for encapsulating data packets, including headers, length, commands, data, and checksums.
- Client-Side Development: Built the client using the **Windows** MFC framework, implementing modules for the UI, networking, streaming, desktop capture, and remote control.
- Desktop Capture: Captured desktop parameters and video streams for screen sharing using TCP Socket Stream.
- Desktop Control: Implemented mouse and keyboard event capture via the event signals mechanism.
- Refactoring: Restructured the client-side architecture using the MVC pattern to achieve separation of UI, business logic, and data models.

Penni Part-time Job Platform

cfc

Full Stack Dev

2024-06-18 - 2024-07-16

- A university club project aimed at helping retirees find part-time jobs.
- Core Functionality: Developed core frontend modules for the registration/login flow, role-switching logic, form validation, and error handling.
- UI Components: Utilized Flexbox and Grid for responsive design and developed a dynamic progress bar for the multi-step registration process.
- Form & Data Management: Implemented reusable custom form components to centralize field state and validation logic.
- File Upload: Integrated Webcam and file upload functionalities, supporting user-captured or uploaded photos with a client-side preview and cropping.
- Authentication & Authorization: Used Axios interceptors to centrally inject JWT tokens and managed token storage with localStorage.
- Data Management & Caching: Leveraged React Query for API data caching to minimize redundant requests.

Intership

StJ John of God Health Care

ST JOHN OF GOD Health Care

Website Architecture

2025-06-18 - 2025-07-16

- Conducted comprehensive web audits on internal and public-facing websites using tools like Google Lighthouse, evaluating performance, accessibility, SEO, and best practices.
- Analyzed user behavior and traffic trends with Google Analytics to identify bottlenecks in the conversion funnel and user drop-off points.
- Mapped and evaluated user journeys to highlight pain points and inefficiencies in navigation and information architecture.
- Provided actionable recommendations to the digital and communications teams to enhance website usability and ensure compliance with WCAG accessibility standards.
- Designed new website UI prototypes in Figma to validate proposed changes and ensure brand and compliance alignment.
- Nominated for the Outstanding Intern Award by my mentor.

Hackathons

- Attended the Quantum Bit AI Developer Conference, 2019
- Participated in the Huawei HDC Conference, 2023
- UWAYE Presents: **Rio Tinto** X **BCG** Hackathon 2024
- Coders for Causes: winter project 2024
- **Susquehanna** Algothon 2025
- WeMoney Financial Wellness AI Hackathon 2025
- CFC **Anthropic** X **Jane Street** Hackathon 2025

Quick Scan

RWLF_FIRE

Scan the QR code to add me as a friend.

Self-Evaluation

- Human-Centric Technologist: Committed to leveraging technology to serve humanity, not to instrumentalize it. Dedicated to using modern technology to create equitable and universally accessible solutions.
- Value-Driven Innovator: Driven to move beyond the superficial application of technology. I seek to disrupt traditional productivity and relationships of production by building intelligent systems that deliver unprecedented personalized value.
- Holistic Technologist: I maintain a constant curiosity for new technologies and am dedicated to building a comprehensive knowledge base to adapt to and lead in the ever-evolving tech landscape.