HONG AN TRAN

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EDUCATION

California State Polytechnic University, Pomona   **Sep 2025 – May 2027**
- **Majors:** B.S. Computer Science - **GPA:** 4.0
- **Coursework:** Data Structures and Algorithm Advanced Programming, Discrete Structures, C++ Programming

EXPERIENCES

Software Engineer Fellow   **Viet Tech Mentorship**   **Mar 2025 – Jul 2025**
- **Collaborated with 10+ engineers to ideate, build, test, and launch** an internal job tracking and application management tool, **serving over 70 community members and the admin team of the Viet Tech Mentorship Program**
- Modularized backend with controller-service-repository pattern and **developed robust API endpoints with Node.js, TypeScript, and MongoDB, ensuring high quality with comprehensive unit tests and integration tests** using Mocha, Chai, and Supertest
- **Partnered with product owner and designer to brainstorm and prototype solution for resource accessibility**, driving RFC process to design data models for job postings and **evaluate designs on engineering effort, consistency, scalability and extensibility**
- **Designed and built a link processing pipeline** with comprehensive URL validation steps and job metadata extraction **using Puppeteer and Gemini on AWS Lambda**, implemented retry logic and other guardrails to ensure service reliability
- **Parallelized link processing to increase throughput by 5x and reduce runtime**; optimized memory usage by refactoring from a multi-window to a single-browser, multi-tab setup, **cutting RAM usage from 3GB to under 1GB**

Software Engineer Intern   **Product Manager Accelerator**   **Sep 2024 – Dec 2024**
- **Architected an AI-driven interview platform** to help students practice their skills, **utilizing Prisma for database schema and Redis for session management**, enabling dynamic question sequencing and **real-time AI interactions** for a seamless user experience
- **Implemneted a scalable JWT-based authentication system with Prisma and NodeMailer**, improving security and reducing latency
- **Engineered a high-quality video-to-text pipeline for model training** using **DistilWhisper (HuggingFace) over OpenAI Whisper, improving transcription speed and cutting costs;** leveraged CLI tools for efficient video/audio extraction
- Boosted transcription accuracy by **optimizing audio with 16kHz resampling, noise reduction, and intelligent chunking; enhanced text quality through NLP post-processing** using **SymSpell for spelling correction** and **Gramformer for grammar refinement**
- **Containerized and deployed the application on AWS** using **Docker, EC2, RDS (PostgreSQL), Redis (ElastiCache), and Amazon S3 (video storage)**, architecting secure private and public subnets for optimized scalability, security, and performance

Software Engineer Intern   **Lacaco Wholesale**   **May 2023 – Aug 2023**
- **Streamlined an automated email processing pipeline** using **Python, Google APIs, OpenAI, and AWS EC2 cron-jobs**, reducing manual effort and cutting response delays by categorizing and responding to **1000+ company inboxes daily with AI-driven logic**.
- **Created an interactive price list conversion tool** leveraging **Pandas, NumPy, and Openpyxl** to unify vendors' file formats; launched via **Streamlit**, accelerating file processing efficiency by 100x and improving cross-team collaboration.
- **Reduced cloud operational costs by 75%** by orchestrating **on-demand infrastructure with AWS EventBridge and cron-based scheduling** to dynamically start and stop **AWS EC2 instances**, supporting cost-efficient email and file processing services.

SKILLS

Programming: C++, Python, Java, JavaScript, TypeScript, HTML, CSS, Git
Frameworks/Libraries: React.js, Next.js, Node.js, Express.js, Svelte, Tailwind CSS, Shadcn, Streamlit, Pandas, NumPy, Matplotlib, Seaborn, Scikit-Learn, Selenium, Puppeteer, Openpyxl, SymSpell, Gramformer, HuggingFace Transformers
Databases: PostgreSQL, MongoDB, Redis, Prisma
Tools: GitHub/GitHub Actions, Docker, AWS (EC2, Lambda, S3, Cloudfront, RDS, ElastiCache, EventBridge), Google APIs (Maps, OAuth, reCAPTCHA, Translate), OpenAI, NodeMailer, Stripe, Vercel, NextAuth

PROJECTS

HongAn-Eshop | *JavaScript, Next.js, AWS, Google APIs, TailwindCSS, MongoDB, Prisma, Vercel, Stripe*
- **Developed a full-stack eCommerce platform** with the **MERN stack (MongoDB, Express, React/Next.js, Node.js)** and **Stripe API**, featuring responsive design, dynamic product pages, and secure checkout for a **seamless cross-device user experience**
- **Designed and implemented MongoDB schema** with **7 models and 30+ RESTful APIs** to support core eCommerce functionality
- **Enhanced UX support for customers** with **Google Translate** integration and **real-time delivery tracking** via **Google Maps**
- **Integrated secure user authentication** using **NextAuth** with **credential and Google OAuth login**; added **Google reCAPTCHA and NodeMailer** for spam protection, email verification and password resets
- **Deployed frontend** with **Vercel** and **served images** through **AWS S3 and CloudFront**, boosting performance and global reach

Job_DashBoard | *Python, Selenium, Streamlit, Machine Learning*
- **Built an interactive dashboard** to predict job salaries based on title, location, and skills; leveraged **Streamlit** for UI deployment
- **Scraped 1,000+ job postings from LinkedIn** using **Selenium**, cleaned and visualized data with **Pandas, NumPy, Matplotlib, Seaborn**, and **trained a Linear Regression model** using **scikit-learn**, **achieved accuracy score of 95%**