

SUSHANTH PURUSHOTHAMA

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Software engineer and PhD Computer Science researcher with experience building production systems, machine learning algorithms, and data-driven tools across manufacturing and web domains. Proficient in Python, C++, and SQL, with hands-on work spanning AI-powered diagnostics, statistical evaluation of classifiers, full-stack web applications, and containerized deployments. Adept at translating complex technical problems into reliable, measurable solutions.

Experience

IT Engineer Intern

Jul. 2025 – Jun. 2026

Pou Chen Group

Taichung, Taiwan

- Built an AI-powered MCP diagnostic tool in Python (Django) that queries Prometheus for live factory metrics via natural language, enabling the operations team to diagnose production incidents 70% faster without manual log analysis
- Designed and deployed a Wagtail CMS platform on Kubernetes with a PostgreSQL backend; wrote optimized SQL queries for content reporting dashboards and modeled schemas for 8+ page types, replacing a legacy Joomla system
- Implemented four production guardrails — intent classification, scope validation, output sanitization, and audit logging — to ensure safe, traceable AI tool usage across the 18-person IT/engineering team
- Containerized applications with Docker, orchestrated deployments on Kubernetes, and established CI/CD pipelines; authored architecture documentation and SOPs for infrastructure knowledge sharing

Research Assistant

Sep. 2024 – Jun. 2025

Asia University

Taichung, Taiwan

- Developed a novel machine learning classifier in C++ using Delaunay triangulation (CGAL library) with O(1) expected-time inference via a Spatial Region Ranking grid; preprocessed and structured 10 UCI benchmark datasets for evaluation
- Built a Python evaluation pipeline with 10-fold cross-validation benchmarking against SVM, Random Forest, KNN, and Decision Tree; applied Friedman ranking test with Nemenyi post-hoc analysis for statistically rigorous multi-classifier comparison
- Published reproducible research artifacts on Zenodo (doi:10.5281/zenodo.18479016); prototyped a six-digit location encoding system and validated geographic coverage by analyzing coordinate datasets across West USA and Taiwan

Frontend Engineer Intern

Mar. 2024 – Jul. 2024

Honest Design

Taichung, Taiwan

- Built and maintained Vue.js features for 3+ client websites using JavaScript, HTML, and CSS; launched honestdesign.com.tw, increasing inbound client inquiries by 60% over 7 weeks
- Implemented English internationalization (i18n) for the company website and improved cross-browser responsive design, expanding accessibility for international clients across mobile, tablet, and desktop

Projects

ImagenPDF.com | *Next.js (App Router), React, TypeScript, Tailwind CSS, Vercel*

2025

- Built and deployed a privacy-first, browser-based PDF/image tool suite with 19 utilities (merge, split, compress, sign, encrypt, resize, convert); implemented i18n for 6 languages, fuzzy search (Fuse.js), and SEO with JSON-LD schemas
- Deployed on Vercel with CI/CD via Git integration; built reusable component library using shadcn/ui and Tailwind CSS, optimized for desktop and mobile with Vercel Analytics for usage monitoring

babaindianfood.tw | *HTML, CSS, JavaScript, Bootstrap, Vercel*

2025

- Designed and built a bilingual (EN/ZH-TW) restaurant website with online reservation integration, Google Maps embeds, and structured data (JSON-LD); deployed on Vercel, increased weekly footfall by 35%

Education

Asia University

Taichung, Taiwan

PhD in Computer Science (GPA: 88.89/100)

Feb. 2024 – Jun. 2027

National College Basavanagudi

Bengaluru, India

MSc in Computer Science (GPA: 84.2/100)

Jan. 2022 – Dec. 2023

Technical Skills

Languages: Python, C++, JavaScript, TypeScript, SQL, HTML/CSS

Frameworks & Libraries: Django, Next.js (App Router), React, Vue.js, Tailwind CSS, shadcn/ui, Framer Motion

Data & ML: Scikit-learn, CGAL, Statistical Testing (Friedman/Nemenyi), Cross-Validation, Data Preprocessing, NumPy

Databases: PostgreSQL, MySQL, MongoDB, SQL Query Optimization

Infrastructure & Tools: Docker, Kubernetes, Git, Linux, Vercel, Prometheus, CI/CD, REST APIs, LaTeX

AI & NLP: MCP (Model Context Protocol), Prompt Engineering, Open WebUI, AI-Assisted Development