Pranav Janakiraman

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Passionate Computer Engineering student with expertise in agentic AI systems and full-stack development. Experienced in building production-ready applications with Next.js, React, and cloud platforms, including vector search and LangGraph agents. AWS-certified hackathon winner and student leader.

Education

Bachelor of Engineering, Computer Engineering   Aug 2024 – Jun 2028
National University of Singapore (NUS), Singapore

Technical Skills & Certifications

- **Languages** – TypeScript, JavaScript, Python, C++, SQL
- **AI/ML & Tools** – LangGraph, Vercel AI SDK, Vector Search, Function Calling, Agent Systems, Next.js, React, Node.js, Express.js
- **Cloud & DB** – AWS (EC2, S3, Lambda, RDS, DynamoDB), Vercel, Docker, PostgreSQL, MongoDB, Redis, Supabase
- **Certifications** – AWS Data Engineer Associate, AWS Solutions Architect Associate, AWS Cloud Practitioner

Projects

TaskGenie – Agentic AI Task Management Platform   May 2025 – Aug 2025
NUS Orbital Independent Software Development Project – Judges' Choice Award

- Architected a multi-agent AI system with 16 function-calling tools via Vercel AI SDK and LangGraph, reducing manual operations by 85%.
- Implemented advanced vector search using 2000-dimensional Gemini embeddings with DPG diversification, enabling semantic task discovery across 10+ database tables with sub-500ms query times and 93% latency reduction.
- Developed production-scale Next.js 15 application with server actions, type-safe mutations, SWR hooks for optimistic UI updates across 155+ custom components, and clean service-layer architecture.
- Achieved 70%+ test coverage using Vitest and React Testing Library; enforced RLS, CSP, OAuth 2.0, and intelligent caching strategies with 20ms streaming architecture for secure, high-performance UIs.

Pawgress – Full-Stack Vite Application   Jan 2025
HacknRoll Hackathon, NUS – Commendation Top 20 Award

- Developed a responsive full-stack web app using React, Tailwind CSS, and Flask, integrating task management with virtual-pet gamification mechanics, boosting engagement by 25% and retention by 40%.
- Engineered scalable RESTful APIs with optimized SQL queries, enhancing task-tracking efficiency by 20% while supporting 200+ concurrent interactions per hour at 99.5% uptime.
- Implemented automated testing pipelines and CI/CD workflows using GitHub Actions, reducing deployment errors by 30% and optimizing state management for a 40% reduction in load times.

Serverless Cloud Resume Platform   Aug 2024 – Oct 2024

- Deployed a serverless portfolio website on AWS (S3, CloudFront, Route 53, Lambda), serving 700+ visits with 99.9% availability via global CDN.
- Built a DynamoDB/API Gateway analytics dashboard, improving data retrieval speed by 40% through optimized NoSQL queries.
- Automated infrastructure deployment using Terraform IaC and GitHub Actions CI/CD, cutting deployment times by 50% and ensuring consistent, reproducible releases.

Awards

NUS Orbital Independent Software Development Project (TaskGenie) – Judges' Choice Award   July 2024

- Recognized with the Judges' Choice Award from over 1,000 participants, highlighting exceptional innovation, technical execution, and impact in software engineering.

SAP SCALE 2025 Hackathon – 2nd Place   July 2025

- Built comprehensive SAP-based aviation dashboard using SAPUI5, S/4HANA, BTP, and Analytics Cloud for real-time operations management.