VARUN S G

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EDUCATION

B.Tech - Computer Science and Artificial Intelligence	Plaksha University, Mohali	8.05/10	2027
12th - Karnataka State Board	Vidyaniketan PU College, Bangalore	92%	2023
10th - CBSE	Vidyaniketan Public School, Bangalore	90.4%	2021

EXPERIENCE

Tech Intern | AlgoUniversity (YC S21) Jun 2026 - Aug 2026

- Designed a queue-based grading pipeline (Next.js, BullMQ, Redis, Gemini 2.5) that scores logic and Big-O complexity in **under 10 seconds**, hardened against prompt injection and hardcoded outputs, replacing manual first-pass grading
- Built an automated LLM code-coaching tool that uses AST-derived hints to guide students through logic errors, cutting human mentor escalations **by 60%**
- Shipped a React tool on the Vercel AI SDK that converts uploaded problem images into structured JSON and formatted Markdown, cutting administrative processing time **by 80%**

OPEN SOURCE CONTRIBUTIONS

Core Contributor | earthtojake/text-to-cad Aug 2026

- Refactored a 5,200+ line Python codebase into modular, single-purpose files with clear boundaries, preserving full functional behavior with **zero regressions** across the CAD generation pipeline
- Hardened the viewer server against path traversal and symlink escapes, added worker timeouts with automatic respawn, and built memory-efficient chunked streaming **(64 KiB chunks)** for multi-gigabyte 3D assets
- Built a persistent 3D measurement tool using **Three.js** raycasting and vertex snapping, supporting complex multi-body CAD assemblies
- Merged **18 pull requests** (20,000+ lines changed) in under a month, becoming the most active outside contributor to this 22.8k-star repository

Contributor | OpenRouterTeam/ai-sdk-provider Sep 2026 - Oct 2026

- Merged **7 TypeScript PRs** into OpenRouter's official Vercel AI SDK provider, including a new public **rerankingModel()** API for the SDK's rerank(), verified on Node and Edge runtimes
- Fixed streaming reasoning metadata that broke multi-turn prompt validation, and runtime routing options that silently overwrote configured provider preferences
- Also merged fixes into **mem0** (67.7k stars, provider config isolation), **browser-use/browser-harness** (18.6k stars, CLI and auth validation) and DBOS Transact (exit-code propagation)

PROJECTS

Deadlock | React, Node.js, Socket.IO, Redis, Supabase, Nginx, DigitalOcean Dec 2025 - Present

- Built a real-time 1v1 coding battle arena using **Socket.IO** and **Node.js**, with ranked matchmaking, invite-link duel rooms and ghost replays, backed by **Redis** Lua scripts that make seat claims and match starts atomic
- Built a **fair-play system**: an editor that blocks outside pastes and large inserts, tab-switch alerts to opponents, and per-player integrity records for human review rather than automatic penalties
- Integrated **Judge0** to run code in 10+ languages against **1,600+ Codeforces problems** with ELO ratings, rating-matched problem selection, and a shared judge queue so test runs never cause false time-limit failures

SKILLS

- **Languages:** Python, C/C++, JavaScript, TypeScript, SQL
- **Frameworks & Libraries:** React, Next.js, Node.js, Socket.IO, Prisma, BullMQ, Three.js
- **AI/ML:** LLM Integration (OpenAI, Gemini), Vercel AI SDK, PyTorch, XGBoost, Transformers
- **Infra & Tools:** PostgreSQL, Redis, Supabase, AWS, DigitalOcean, Nginx, Git, REST APIs

ACHIEVEMENTS/EXTRACURRICULARS

Silver Medal (166th / 3677 Teams) | Hull Tactical Market Prediction

- Enhanced FT-Transformer + XGBoost pipeline with SAM optimization for S&P 500 excess-return forecasting, achieving a **1.699 Sharpe ratio**

1st Place | Dot Slash Hackathon (Product Cataloging)

- Built a local vendor e-commerce **cataloging pipeline** integrating **bounding box detection** and the **Gemini API** for automated **image-to-CSV product** extraction

Kickstart Award ($10k Grant) | Stellar Community Fund

- Secured funding for a Web3 project architecture designed to drive network utility and monetize content on the Stellar Chain