Amogh Paruvelli

Software Engineer
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Education

University of Wisconsin-Madison Madison, Wisconsin
Bachelor of Science in Computer Science and Data Science *September 2023 – December 2026*
GPA: 3.58
Relevant Coursework: Data Structures, Algorithms, Operating Systems, Relational Databases, Matrix Methods in ML

Skills

Languages: Python, Java, TypeScript, JavaScript, SQL
AI-Assisted Development: Claude Code, Codex, MCP (Model Context Protocol), RAG, PyTorch, Pydantic
Backend & Cloud: FastAPI, Spring MVC, Hibernate, Node, React, REST APIs, AWS (Lambda, API Gateway, S3, Bedrock)
Data & Infrastructure: PostgreSQL, MS SQL Server, Redis (NoSQL), Databricks, PySpark, Docker, CI/CD, Git

Experience

Data Engineer Intern May 2026 – August 2026
Ebara Elliott Energy *Jeannette, Pennsylvania*
- Slashed data ingestion time from **60 min to 3 min**, replacing manual ticket process handled by 4-5 people, by building self-service web app in Python and Streamlit that loads CSV, JSON and Parquet files into Databricks tables
- Consolidated 8.2k record linkage conflicts from 15 sources into master schema of **2,082+ golden records**, using fuzzy-matching pipeline built on RapidFuzz and TF-IDF weighting

Software Engineer February 2026 – July 2026
Handlab Poker Intelligence *Remote*
- Built RAG engine over **30k transcribed poker games** that retrieves relevant strategic trends from hand histories indexed in Pinecone, expanding queries with 400-term jargon dictionary
- Engineered SQL translation layer with 3s response time for exact betting line searches, using LLM to read user intent and produce API requests that build and run queries
- Shipped AI coaching SaaS tool to **3 paying clients**, iterating on feedback via monthly Agile sprints in two-person team

Software Engineer Intern June 2025 – September 2025
Spencer's Gifts and Spirit Halloween *Egg Harbor Township, New Jersey*
- Implemented Java endpoint class returning per-variant stock status and pickup button text as JSON for shopper's store
- Coded Redis key builder and GET and SET calls for cache-aside inventory lookups that cut redundant product-page calls
- Wrote 12 JUnit tests on mocked Redis client covering controller validation and service caching, plus cache-miss metrics

Projects & Research

Amazon Shopbop Capstone | *TypeScript, Expo, AWS Lambda, Amazon Bedrock* September 2026 – Present
- Launched serverless backend backed by 116 Vitest unit tests, serving GET /puzzle/today and POST /guess on AWS Lambda and API Gateway, rating each guess warmer or colder by cosine similarity of Bedrock Titan embeddings
- Ran weekly Agile sprints and Jira ticketing as Scrum Master for five-person team building Wordle-style puzzle where shoppers guess hidden Shopbop item from cropped photo in six tries, live on AWS Amplify

SAW (Shared Agent Workspace) | *TypeScript, Node.js, MCP, Claude Code, SQLite, Docker* July 2026 – Present
- Exposed chat messages and git refs through **5 MCP tools** by building multi-agent coordination layer that lets AI coding agents (Codex, Claude Code) pair-program in shared workspace
- Designed WebSocket relay protocol that carries chat messages and git refs between agents, persisting state in SQLite on mounted Docker volume across restarts of self-hosted service

Disentanglement of Safety and Utility in LLM Activation Spaces | *PyTorch* January 2026 – May 2026
- Bypassed AI guardrails with **93% attack success rate** across 420 harmful prompts via activation-vector ablations, retaining 62% reasoning accuracy by extracting utility direction from 37k HelpSteer response pairs
- Led team of five to reverse-engineer how Gemma-2-2B-IT and Llama-3.1-8B-Instruct balance safety rules against helpful responses, replicating Difference-of-Means and ActSVD methods from two arXiv publications

Curio | *FastAPI, OpenAI API, WeasyPrint, React, Tailwind CSS, Vercel* October 2024 – January 2025
- Developed full-stack platform with FastAPI and React that generates computer science curricula on demand, integrating GPT-4o endpoints to automate localized problem-set creation; shipped MVP at MadHacks 2024