

Vedant Jain

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EDUCATION

University of Southern California (USC)

Los Angeles, CA

Bachelor of Science in Computer Science | Dean's List

May 2026

President of Theta Tau (USC's Premier Engineering Society) | FIRST Robotics Competition Dean's List Finalist

Relevant Coursework: Data Structures, Algorithms, Object-Oriented Design, Computer Architecture, Operating Systems, Discrete Mathematics, Full-Stack Web-Dev, Distributed, Parallel, & Embedded Systems, AI & NLP

SKILLS

Programming: Python, TypeScript, JavaScript (Next.js, React.js, Node.js), Java, C/C++, SQL, HTML, CSS, PyTorch, TensorFlow

Tools: Unix/Linux, MCP, Claude Code, AWS (Lambda, S3, SNS, DynamoDB), Redis, PostgreSQL, Docker, Git, Hypothesis

EXPERIENCE

Amazon Web Services (SageMaker AI)

Seattle, WA

Software Development Engineer (ML)

Jul 2026–Present

- Designed & shipped an access-request workflow for ~1600 users serving 12K+ model artifact repositories on lakeFS
- Served on-call for a 69M+ req/week production service; redesigned alerting logic, cutting false-positive pages ~65%
- Automated a weekly audit report using Step Functions; designed an LLM agent to deep-dive & fix flagged anomalies

Amazon (AGI Infrastructure)

Seattle, WA

Software Development Engineer Intern

May 2025–Aug 2025

- Built AGI onboarding platform to manage/distribute ~800 petabytes of model artifacts/metadata/training data securely
- Reduced model distribution SLA by 99% through a full-stack workflow with automated validation & authorization
- Built dynamic React.js UI & Java backend with 4 RESTful APIs, Lambdas, & SNS for message-driven architecture
- Delivered a production-grade system with 100% test coverage across S3, SNS, API Gateway & Lambda

Biorobotics Lab @ Carnegie Mellon University Robotics Institute

Pittsburgh, PA

Robotics Software Engineering Intern (Computer Vision Project)

May 2024–Aug 2024

- Implemented & tested camera module & Hokuyo laser in ARPA-E commissioned pipe-inspection robot using Gazebo
- Developed a ROS node that synchronized 10,000+ laser-scan points & images to generate colorized 3D point clouds
- Simulated 1,000+ inspections in RViz, leveraged point-clouds in fault detection, tuned model for field testing

USC Viterbi School of Engineering

Los Angeles, CA

Teaching Assistant (Internetworking, Full-Stack Web Dev, Distributed Systems & IoT, C++)

Aug 2023–May 2026

- Led weekly labs on IoT, TCP/IP, MQTT, cloud computing, embedded OS concepts, & AI for distributed systems
- Held 16 office hours weekly teaching web development in React, debugging & grading large-scale full-stack projects
- Built two C++ homework tools: a robotic-arm GUI using inverse kinematics & a green-screen removal pipeline

PROJECTS

Calibrate (Post-Training Data Quality)

- Built an IRT (2PL) engine that scores post-training tasks by difficulty & discrimination & flags broken ones
- Built 211 validated tasks; caught 37/40 planted-bad ones at 1.8% false positives on a simulated model ladder
- Tech: Python, NumPy, SciPy, SQLAlchemy, FastAPI, Subprocess Sandbox, Pytest, Hypothesis

Agent Regression Flywheel (Agent Eval Infra)

- Built a closed-loop agent-eval pipeline: LangGraph agent, HDBSCAN failure mining, Modal sandboxes
- Gated promotions behind a McNemar's significance test; shipped a FastAPI/Django + Next.js dashboard, 58 tests
- Tech: Python, FastAPI, Django, LangGraph, Temporal, Redis, Modal, Next.js, PostgreSQL

Hindsight (Post-Training Data)

- Built a replay engine that finds the decisive failing step in agent runs & turns it into SFT & DPO training data
- Pinpointed the fatal step in 89-100% of failed runs vs ~5% for log heuristics, ~80% fewer rollouts (scripted policy)
- Tech: Python, FastAPI, SQLite, PyTorch, HuggingFace Transformers, NumPy, SciPy, Pytest

Agent Ops Console (Human-in-the-Loop Agent QA)

- Built a React & FastAPI console where reviewers flag agent mistakes; approved flags become regression tests
- Shipped immutable versioned releases with rollback & A/B comparison on identical seeded traffic; 32 pytest tests
- Tech: Python, FastAPI, SQLAlchemy, Pydantic, React, Vite, Recharts, Pytest