Samvit Kundapur

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Education

University of California, San Diego — La Jolla, CA
Bachelor of Science in Computer Science — *Expected Graduation, June 2029*

Washington High School — Fremont, CA
High School Diploma — *June 2026*

Experience

Undergraduate Research Assistant — June 2026 – Present
University of Michigan — *Flint, MI*

- Developed a GraphRAG pipeline using Python, Slurm, and Hugging Face to synthesize multi-document information into user-personalized summaries.
- Built preprocessing infrastructure for UserDB using Pandas, NumPy, and Ollama, combining two distinct datasets to generate a database composed of synthetic personas for personalized retrieval.
- Designed a summarization evaluation framework that tracks provenance and preserves contrasting entity relationships by adapting 30+ benchmarks.

Software Engineering Intern — May 2024 – Aug. 2025
eightfold.ai — *Santa Clara, CA*

- Built 27 MCP tools using Python and the Anthropic API to expose configuration files, AWS S3 logs, and Microsoft Azure data, enabling support engineers to quickly diagnose ticket issues.
- Developed an analytics platform using Pandas, JavaScript, and SQL to analyze the mapping between Jira tickets and support teams, identifying routing issues and reducing ticket resolution time.
- Authored design documentation, presented results to senior leadership, and collaborated with the support automation team to implement technical solutions.

Coding Instructor — Dec. 2025 – June 2026
Code Ninjas — *Union City, CA*

- Coached a FIRST Robotics team, guiding students through programming, setting technical objectives, and communicating their progress with parents.
- Planned and led five software workshops in Python and C#, incorporating mini-projects, activities, and discussions to promote student development.
- Coordinated with management to design a broader software curriculum spanning web development and introductory machine learning.

Projects

TVision: Tumor Nucleus Detection | *Python, PyTorch, YOLO, OpenCV, FastAPI* — June 2026 – July 2026

- Developed a reproducible NuCLS-to-YOLO preprocessing pipeline using Pandas and NumPy to convert raw annotations into validated, leakage-safe training data.
- Fine-tuned a pretrained Ultralytics YOLO26n model with PyTorch for tumor-nucleus detection in histopathology images and used OpenCV to render predicted bounding boxes.
- Implemented a standalone inference layer and evaluated the frozen detector, improving the base model's detection performance by 17%.

Technical Skills

Languages: Python, Java, SQL, JavaScript, HTML/CSS, R
AI/ML: RAG, LLM Agents, Multi-Agent Systems, MCP, YOLO, OpenCV, Ollama
Frameworks: React, Flask, FastAPI, REST APIs
Developer Tools: Git, Docker, AWS, Microsoft Azure, Linux, VS Code
Libraries: Pandas, NumPy, Matplotlib, PyTorch, TensorFlow