

Satvi Kammula

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EDUCATION

University of California, San Diego

B.S. in Computer Science | GPA: 3.9/4.0

Graduating June 2026

Relevant Courses: Machine Learning, Deep Learning, Artificial Intelligence, Natural Language Processing, Data Structures & Algorithms, Databases, Software Engineering, Systems Design, Probability & Statistics, Finite Automata

TECHNICAL SKILLS AND CERTIFICATIONS

Programming Languages: Python, C++, Java, JavaScript, C

Frameworks/Libraries: PyTorch, TensorFlow, scikit-learn, NumPy, Pandas, OpenCV, Hugging Face Transformers

Web Development & Databases: HTML, CSS, MySQL, MongoDB, REST APIs

Developer Tools: Git, GitHub, Linux, Valgrind, GoogleTest, CMake, VSCode

Certifications: Harvard CS50 AI with Python

EXPERIENCE

Undergraduate Researcher | Neurogastroenterology and Hepatology Group

September 2024 - Present

UC San Diego Health

- Designed deep learning models (U-Net, U-Net++) to segment cylindrical phantoms from MRI scans and compare predicted fat concentrations to ground truth for accuracy evaluation
- Developed an MRI registration pipeline using in-phase, out-of-phase, and water scans to align liver images for improved fat quantification
- Building a real-time multi-head U-Net system for live liver segmentation during ultrasound exams to enhance diagnostic workflows
- Partnered with clinicians, engineers, and data scientists to align deep learning pipeline outputs with diagnostic and research goals

PROJECTS

Climate Pattern Prediction

github.com/satvikak/CSE151B-Competition-Code

- Placed **top 25%** in Kaggle competition (score: 0.9398) by developing and fine-tuning a **U-Net with attention** for spatiotemporal climate prediction
- Benchmarked performance across multiple architectures, including baseline **CNNs**, **DenseNet**, **ResNet**, and **U-Net variants**, optimizing model accuracy and generalization
- Visualized spatial loss maps and attention weights to identify high-error regions and inform iterative design refinements

Green Lens - AI Climate Argument Retrieval Engine

green-lens.streamlit.app/

- Collaborated in team of 4 to design and deploy a real-time system for retrieving peer-reviewed climate science articles based on user arguments, using **FastAPI**, **Streamlit**, and **OpenAI's GraphRAG** architecture
- Engineered high-performance retrieval pipeline using **BERT+FAISS**, **BM25**, and **TF-IDF**, achieving a top relevance score of 0.78 with query latency under 7 seconds
- Automated citation generation and structured evidence summarization to improve transparency and scalability

Restaurant Simulator

github.com/satvikak/RestaurantSimulator

- Collaborated with a team of 4 and developed a fully functional restaurant simulator using C++
- Utilized **Agile methodology** and **object oriented design** for components including tables, order items, and servers
- Wrote 40+ unit tests via GoogleTest to ensure code's robustness with 100% code coverage
- Acted as a developer and scrum master, responsible for encouraging effective team communication and cohesiveness of different modules