DIYA SAHA

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EDUCATION

University of California, Irvine **June 2025**
Master of Science, Computer Science

University of California, Santa Cruz **June 2023**
Bachelor of Science, Computer Engineering and Minor in Computer Science

SKILLS

Programming Languages: Python, Git, Java, SQL, MATLAB
Backend & Data Tools: FastAPI, Langchain, BeautifulSoup, Pandas, NumPy, OCR (Tesseract/OpenCV), FAISS, Docker, Kubernetes
Cloud & DevOps: AWS, GCP, Vercel, Streamlit, REST APIs, WebSockets
MLOps: Production-ready pipelines, RAG Systems, LLM, CI/CD, Scikit-learn
Certifications & Training: AWS AI Practitioner & AWS Cloud Practitioner, Google Certifications (Data Analytics, UI/UX Design)
Awards: Dean's Honor on multiple quarters; top 15% of my class

WORK EXPERIENCE

Graduate Researcher - Canine Cancer Research with Dr.Pierre Baldi | Irvine, CA **July 2024 – Oct 2024**

- Led the automation of clinical report summarization across 10,000+ canine patient records by integrating OCR, NER, and LLM modules, eliminating the need for handwritten reports by veterinarians.
- Transformed unstructured PDF reports into structured, backend-ready datasets by developing modular pipelines for entity extraction, variant tagging, and summary generation, laying the foundation for a scalable database and downstream evaluation tools.
- Delivered a black-box prototype interface for clinician use, reducing manual reporting time by 30% and enabling structured entity-based querying, designed for seamless integration into Anivive's professional workflow.

Software Developer Intern - DSights.Inc| Los Angeles, CA **June 2022 – Sep 2022**

- Engineered a custom data ingestion pipeline to scrape and process 50+ restaurant menus from public sites and PDFs using BeautifulSoup, OCR, and manual corrections, enabling structured comparison across multi-format sources.
- Conducted EDA with Pandas, Seaborn, and Matplotlib to identify ingredient trends and standardize menu categories, applying refined Jaccard similarity to compare items and cluster dishes.
- Developed a client-facing prototype with HTML/CSS and collaborated with cross-functional teams to validate results, deliver insights, and iterate on matching logic based on stakeholder feedback.

PROJECTS

SmartRoom - Real-Time HVAC Control Platform | Kafka, FastAPI, WebSockets, Linear Regression, Python 🔗 **June 2025**

- Engineered a full stack IoT platform with Apache Kafka, FastAPI, and WebSocket dashboard for sub-second, multi-room HVAC monitoring and control.
- Created a custom predictive algorithm with a novel comfort-energy loss function, achieving 25% simulated energy savings using real-world weather data.
- Built RESTful/WebSocket APIs and interactive frontend controls for instant system feedback, live charting, and user-driven HVAC adjustments.

TL;DW(Too Long; Didn't Watch)| Python, Streamlit, Gemini, Whisper 🔗 **Apr 2025**

- Engineered a modular video processing tool integrating Whisper and Gemini APIs for transcription and quiz generation, using the YouTube API to dynamically extract content and resolve broken or invalid URLs.
- Optimized backend performance and reliability through function-level caching, session-based state management, and resilient API logic, ensuring seamless UX across reruns and failure-prone inputs.
- Validated the system with 50+ users, who reported high satisfaction with the seamless experience enabled by Streamlit's interactive UI and the system's ability to handle long-form content end-to-end.

CourseBuddy – RAG Chatbot for UCI Courses | Python, BeautifulSoup, LangChain, FAISS, HuggingFace 🔗 **June 2024**

- Built a backend RAG system for academic guidance by scraping and structuring UCI course entries with BeautifulSoup and storing dense embeddings in a FAISS vector database for real-time semantic search.
- Improved LLM accuracy and reduced hallucinations by grounding responses in scraped course descriptions and academic FAQs via a custom LangChain retriever and prompt template.
- Modularized backend pipeline for LLM integration and client use; validated system through user testing with ~60 students, receiving consistent positive feedback on utility and usability.