Nabeel Sabzwari - Computer Science, M.S.

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Professional Objective

Driven master's student in Computer Science at UC Davis and a College of Engineering graduate from UC Berkeley, bringing 3+ years of software development, data science, and machine learning. Seeking software roles to apply my expertise in solving meaningful problems.

Skills

Languages: C/C++, Golang, Java, JavaScript, MATLAB, Python, R, Ruby, SQL, TypeScript
Technologies: AWS, Bash, Docker, Django, Firebase, Flask, Git, Google Cloud Platform, HPC, Jira, LangChain, Linux, LLMs, LlamaIndex, Next.js, Node.js, noSQL, PyTorch, RAG, REST API, ROS, React, Snakemake, Splunk, Tailwind CSS, Tensorflow

Experience

Graduate Student Researcher - Dennis Lab (UC Davis) - Davis, CA Nov 2024 - Present
- Developed scalable data analysis pipelines in Python and R on an HPC cluster using Slurm, processing over 10 TB of structured and unstructured genomic data to extract actionable biological insights.
- Designed automated workflows with Snakemake and Bash scripting to streamline multi-stage data processing, significantly reducing manual effort and runtime variability.
- Integrated open-source tools containerized with Apptainer to ensure reproducibility and efficiency across diverse bioinformatics tasks within the genomic pipeline.

System Engineering Co-Op (iRhythm Technologies) - San Francisco, CA Jan 2023 - Sep 2023
- Conducted over 20 system verification and validation tests for the Zio AT heart monitoring device, assessing BLE and cellular performance in varying coverage conditions.
- Leveraged knowledge in Python, data structures, algorithms, and code optimization to automate two tests during the test cycle for a heart-monitoring device, resulting in a remarkable 80% and 99% time reduction, respectively.
- Optimized an existing battery model for the heart monitoring device by creating a Python-based Monte Carlo simulation that more accurately represented field conditions.

Data Scientist Intern (Xtrava Health) - Santa Clara, CA June 2022 - Sep 2022
- Created a script using Python to extract patient data from over 500 scanned tests from digital COVID-19 sensors.
- Implemented and presented Python visualization scripts to pinpoint areas of improvement in Xtrava's COVID-19 detection algorithm.

Projects

Skin Cancer Lesion Classification — Davis, CA Mar 2025 – Present
- Architecting and implementing a CNN-based computer vision pipeline using PyTorch in a team to classify skin lesions and assess model bias across varying skin tones.
- Curating an image dataset of diverse skin tones using GANs, supporting robust backend training workflows, and enabling unbiased cancer prediction benchmarks.
- Scheduling weekly meetings to discuss individual progress and hurdles, promoting problem-solving and effective communication.

AI Agent for Medicinal Data Insights (link) - San Jose, CA June 2024
- Developed an AI agent using RAG to analyze medicinal data from a 50k-entry CSV file sourced from Kaggle.
- Integrated pandas for parsing the CSV into a dataframe and developed tools for the AI agent to extract insights from both the CSV and a PDF document on amoxicillin.
- Implemented LlamaIndex for efficient data retrieval and utilized OpenAI API (ChatGPT 3.5 turbo) as the language model for generating responses and insights.

Deep Learning Model for Tumor Classification - Davis, CA Mar 2024 - Oct 2024
- Developed, trained, and evaluated deep learning models using TensorFlow in Dr. Laura Marcu's lab to predict clean fluorescence signals from noisy tumor data, looking at R^2 and domain-specific metrics for model validation.
- Presented comprehensive findings biweekly on the application of machine learning in FLIm-based brain surgery to the research team, contributing to an interdisciplinary understanding and fostering collaborative research efforts.

Education

Masters of Science, Computer Science (UC Davis) Expected Graduation June 2025
- GPA: 3.6
- Relevant Coursework: Probability Models for Computer Science, Machine Learning and Discovery

Bachelor's of Science, Bioengineering (UC Berkeley) Aug 2020 - Dec 2022
- GPA: 3.8
- Relevant Coursework: Python Fundamentals, Data Structures and Algorithms, Data Science, Robotics

Recommendations

See https://www.linkedin.com/in/nabeel-sabzwari/ for recommendations.