Krishan Kanji

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EDUCATION

University of California, Berkeley **Berkeley, CA**
College of Computing, Data Science, and Statistics **May 2026**
B.A. Computer Science | B.A. Data Science | (Double Major)

- **Coursework:** Data Structures & Algorithms, Principles & Techniques in Data Science, Data Engineering, Designing, Visualizing and Understanding Deep Neural Networks, Efficient Algorithms and Intractable Problems

WORK EXPERIENCE

UC Berkeley DNA Sequencing Facility *(Python, Command Line)* **Berkeley, CA**
Software Engineer Intern **January 2025 - Present**

- Designed and implemented an automated processing pipeline on Berkeley's Savio system to manage Oxford Nanopore sequencing data. Reduced processing time from 36 hours to 4-5 hours, improving research efficiency
- Engineered Python algorithms to parse, and transform, raw sequencing data (FASTA, FASTQ). Streamlined storage and retrieval processes, ensuring efficient management of up to 1,000 samples processed daily.
- Collaborated with scientists, technical staff, and graduate students to integrate computational improvements into the facility's sample submission portal, streamlining the submission process and ensuring reliable data delivery.

ARound Entertainment *(React, Express, Python)* **New York, NY**
Lead Backend Software Engineer Intern **May - September 2024**

- Designed and implemented the entire backend architecture for a scalable job searching application using Node.js, Express, and Firebase, improving data retrieval efficiency by 30% and scaling for over 500,000 users.
- Designed a complete database and implemented REST API endpoints and advanced APIs, such as AES encryption, optimizing data processing and reducing server response times to better user experiences and privacy.
- Led meetings and assigned tasks to interns, creating project plans and providing guidance to ensure timely completion and collaboration, while resolving errors and issues related to dependencies and compatibility.

PROJECTS

Autonomous Mars Rover Software *(C++, C, PyTorch, TensorFlow)* **February 2024 - Present**

- Deployed fault tolerant ROS 2 architecture on NVIDIA Jetson for an autonomous Mars soil collection rover, enabling real-time SLAM, path planning, and mining coordination to support extraterrestrial habitat construction.
- Designed autonomous navigation software implementing custom SLAM with multi sensor fusion (LIDAR/IMU/visual odometry) and hierarchical A*/RRT path planning for precise sulfur deposit localization
- Developed terrain adaptive navigation algorithms using CNN based classification and dynamic window approach obstacle avoidance, achieving <0.5m mapping accuracy in random unstructured environments.

SpotSaver *(Python, C++, Flask)* **October 2024**

- Created a Flask-based web app for Boston Dynamics' Spot robot, implementing gRPC for two-way audio and one-way video streaming, enabling remote search/rescue operations with a projected 30% reduction in response times and 30% faster survivor retrieval through an advanced location logging and mapping algorithm.
- Integrated Groq AI for instant translations in 15 languages, enhancing global rescue communication while using the robot to safely locate survivors in hazardous environments.

CalSol Strategy *(Python, C++, C)* **August 2024 - Present**

- Developing a State of Charge (SOC) estimator for CalSol's solar vehicle, leveraging advanced Kalman filters and machine learning techniques to accurately predict battery performance under various dynamic conditions.
- Designing and fine-tuning complex algorithms to improve real time energy management, optimizing the solar vehicle's overall efficiency and ensuring reliable performance throughout competitive solar races.

SKILLS & INTERESTS

Technical Skills: Python, Java, C++, C, ROS (rospy, roscpp), Pandas, Numpy, SQL, PyTorch, TensorFlow
Other: CAD/CAM (Solidworks, Fusion 360), Wood/Metal Fabrication, Welding, Biochemical Lab Work
Interests: Robotics & Autonomous Systems, Space Exploration, Embedded Systems, Computer Hardware, Cooking