Krishan Kanji

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EDUCATION

University of California, Berkeley **Berkeley, CA**
College of Computing, Data Science, and Society **December 2025**
B.A. Computer Science | B.A. Data Science | (Double Major)

- **Coursework:** Designing, Visualizing & Understanding Deep Neural Networks, Machine Learning, Artificial Intelligence, Data Structures & Algorithms, Computer Architecture, Efficient Algorithms & Intractable Problems

WORK EXPERIENCE

Galactic Resource Utilization Space (YC W26) *(Python, C++, PyTorch, Isaac Sim)* **San Francisco, CA**
Founding Engineering Intern **April 2025 - December 2025**

- Led technical authorship of a NASA NSPIRE Step B proposal for a Martian tunneling rover and co-authored an accepted lunar mining rover autonomy paper on multi-robot navigation for the LSIC at Johns Hopkins APL.
- Built a high fidelity Isaac Sim lunar rover stack with procedurally varied terrain, sensor noise models, telemetry replay, and scenario randomization to evaluate perception and autonomy under distribution shift.
- Developed simulation infrastructure for autonomy validation, including automated metrics for collision, slip, touchdown quality, and pose error to benchmark navigation and state-estimation performance.
- Designed learning-based sensor fusion and guidance for lunar landing in PyTorch, training policies to adaptively weight heterogeneous sensors for robust altitude and pose estimation in degraded sensing conditions.
- Defined autonomy and sensing requirements for lunar landing and subsurface prospecting, including payload trade studies, error budgets, and performance dashboards for localization, fuel, power, and resource detection.

UC Berkeley DNA Sequencing Facility *(Python, Bash, CLI)* **Berkeley, CA**
Software Engineering Intern **January 2025 - May 2025**

- 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.

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

- Engineered the backend architecture, database, and REST APIs for a scalable job search platform using Node.js, Express, and Firebase, improving data retrieval efficiency by 30%, reducing response times, implementing AES-based data protection, and supporting scale to 500,000+ users.

PROJECTS

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

- Designed ROS 2 architecture on NVIDIA Jetson for an autonomous Mars regolith 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.

CalSol Strategy SOC Estimator *(Python, C++, C)* **August - December 2024**

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

SKILLS & INTERESTS

Technical Skills: Python, C++, ROS/ROS 2, PyTorch, NVIDIA Isaac Sim/Lab, Linux, Docker, NumPy, TensorFlow
Interests: Robotics, Autonomous Systems, Computer Vision, Reinforcement Learning, Space Systems