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

ARound Entertainment *(JavaScript, Python)*   **New York, New York**
Lead Backend Software Engineering 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

Detecting Faulty Commits in GitHub Repositories *(PyTorch, TensorFlow, Python)*   **December 2024**
- Designed a PyTorch neural network to classify faulty code commits, improving accuracy to over 85% by optimizing hyperparameters, training on 43,505 samples, and implementing advanced learning rate scheduling.
- Utilized machine learning techniques to analyze feature data (1,098 input features) for commit fault prediction, enhancing the model's generalization through effective batch sizing and cyclic learning rate adjustments.
- Designed and executed iterative training pipelines, incorporating advanced metrics evaluation, validation optimization, and detailed performance plotting to drive insights and significant model improvements.

Image Classification Neural Network (CIFAR-10) *(PyTorch, TensorFlow, Python)*   **October - November 2024**
- Designed a three layer convolutional neural network with custom forward and backward passes for convolution, pooling, and affine layers, achieving 70% classification accuracy with batch normalization and dropout.
- Optimized Cython based fast convolutional and pooling layers by resolving dimensional mismatches, enabling efficient computations, and improving training speeds with precompiled extensions.

SpotSaver *(Flask, Python, C++, C)*   **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.

Mars Habitat Berkeley Rover Software *(C++, C, Python)*   **February 2024 - Present**
- Designing and developing autonomous driving software for a prototype Mars rover, enabling navigation, and obstacle avoidance in an unstructured, Mars-like environment to locate sulfur-containing soil deposits.
- Leveraging computer vision and reinforcement learning to implement real-time object detection, and adaptive pathfinding, accounting for the ever-changing Martian terrain and environmental conditions.
- Deploying custom artificial intelligence, neural network models on specialized silicon to ensure efficient processing and decision-making for autonomous exploration and resource acquisition.

SKILLS & INTERESTS

Technical Skills: Computer Programming/Data Analysis (Python, R, Java, Javascript, C++, SQL), AI/Machine Learning (Pytorch, TensorFlow), React, Node, Express, Pandas, Firebase, REST API
Other: Wood/Metal Fabrication, Welding, Biochemical Lab Work, CAD/CAM (Solidworks, Fusion 360)
Interests: Machine Learning, Embedded System Software, Space Exploration, Computer Hardware, Travel, Cooking