Nandu Krishna Raji Mol

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nandu-kris7.github.io/Portfolio/

EDUCATION

California State University, Northridge   Northridge, CA
*Master of Science in Computer Engineering **(GPA: 3.68/4.00)***   *Aug. 2024 – May 2026 (Expected)*

APJ Abdul Kalam Technological University   Thiruvananthapuram, Kerala
Bachelor of Technology in Electronics and Communication Engineering   *Aug. 2017 – Mar. 2021*

EXPERIENCE

California State University, Northridge   Jan. 2025 – Present
Graduate Research Associate, CSUN ARCS   *Northridge, CA*
- Collaborating on a NASA-backed research project to improve drone processor fault tolerance for Mars missions.
- Designing a buffer system to store critical flight data for auxiliary-processor handoff during primary processor failure.
- Addressing power constraints by enabling failover without running dual processors simultaneously.

Rajadhani Institute of Engineering and Technology   Oct. 2019 – Jan. 2024
Co-Founder, WELKIN AVES   *Thiruvananthapuram, Kerala*
- Developed a drone prototype with a battery-swapping feature.
- Raised $12,000 for prototyping through government grants; incubated at AICTE IDEA Lab and Cisco ThingQbator.

PROJECTS

Risk-X Real-Time Risk Intelligence Pipeline | *Azure (Event Hubs, Container Apps, SQL), Python, Streamlit, Drift Detection (ADWIN/Page-Hinkley)*
- Built a cloud-native Azure pipeline to replay IEEE-CIS fraud transactions into Event Hubs and score streams via a containerized Python microservice (Azure Container Apps).
- Implemented online anomaly scoring with drift detection (ADWIN, Page-Hinkley) and an auto-adaptation policy to recalibrate alert thresholds and reset the anomaly model upon drift to maintain stable alert quality.
- Persisted scoring and drift events in Azure SQL and developed a Streamlit dashboard for monitoring and auditability; *in progress:* offline evaluation and reliability/performance benchmarking.

Camera-Guided Humanoid Navigation (Ainex) | *ROS Noetic, Python, OpenCV, OpenAI Vision-Language Model*
- Conducting research under **Prof. Michael Cho** on closed-loop camera-guided navigation for an Ainex humanoid using ROS Noetic, integrating perception, decision-making, and actuation for real-time autonomous motion.
- Implemented a vision-language decision module to map live frames into safe actions (forward/left/right/stop/ask-user) and execute motion via ROS services/scripts; *in progress:* expanding trials, strengthening safety logic, and optimizing end-to-end latency.

TECHNICAL SKILLS

Languages: Python, SQL, Embedded C, VHDL, SystemVerilog
ML / Data: Anomaly Detection, Drift Detection (ADWIN, Page-Hinkley), Feature Engineering, Model Evaluation, Cross-Validation, Hyperparameter Tuning
Cloud / DevOps: Microsoft Azure (Event Hubs, Container Apps, Azure SQL), Docker, Git
Robotics / Tools: ROS Noetic, OpenCV, VS Code, Keil uVision, AMD Vivado, Libero SoC Design Suite
Libraries: pandas, NumPy, Matplotlib, Scikit-learn, TensorFlow, XGBoost