Akash Balakrishnan

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EXPERIENCE:

Oxford Instruments (OI:XT) Intern - Artifact Detection Automation System Jan 2024 - July 2024

- Developed artifact detection algorithms in Python with NumPy, improving accuracy, reducing manual review time, and implementing automation modes to suit diverse operational needs.
- Through the incorporation of instrument control and image processing techniques into a skeuomorphic GUI, acquisition time was cut by up to 80%.
- Designed a user-friendly GUI with WinForms, enhancing usability for operators, and collaborated within a 5-member team using SCRUM practices for efficient project delivery.
- Assisted operators by automating the detection of small artifacts on Beryllium disks, streamlining the production of X-ray tubes to meet stringent buyer specifications.
- Programmed and automated Gsense4040 X-ray camera operations using Python, integrating local server commands, and optimizing system performance via NI-DAQ 6009 and NI-DAQ 6501 for precise power supply and pneumatic control.

PROJECTS:

SSN Word Identification Jan 2024 - Mar 2024

- Developed a speech-to-text system using Spiking Neural Network (SNN) and librosa for audio feature extraction.
- Implemented multithreading to enhance performance and reduce computation time.

AnimeAI - React Full Stack Web Application Jun 2023 - Jul 2023

- Developed a Full Stack Web Application for personalized anime recommendation.
- Implemented a Flask and Node.js server for seamless backend functionality.
- Conducted efficient queries using an SQLite database populated through web scraping.
- Collaborated in a team, adhering to Agile and SCRUM practices for effective project management.

Small Company Network Nov 2022

- Designed a network for a 4-story building, with each floor and data center assigned unique switches and subnets.
- Configured IP-based routing by analyzing source/destination IPs and ports for accurate packet delivery.
- Enhanced server security by blocking traffic from untrusted hosts and restricting ICMP traffic to conceal internal IPs.
- Developed POX controller rules for efficient traffic management, optimizing packet processing by using switch memory for predefined actions.

RSA Encryption and Decryption in C Feb 2023

- Developed a robust RSA encryption and decryption system in C, ensuring secure data transmission and compliance with industry standards for cryptographic security.
- Demonstrated knowledge in cryptographic algorithms, secure communication protocols, and integer manipulation for high-security applications.

EDUCATION:

University of California, Santa Cruz - BS in Computer Engineering Sept 2020 - Aug 2024

CERTIFICATIONS:

Artificial Intelligence Specialization - Andrew Ng Sept 2024

RELEVANT COURSES: Applied Discrete Mathematics, Computer Architecture**,** Python Programming and Abstractions, Database Management, Technical Writing, Computer Networks