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Snehith Nayak

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EDUCATION

University of California Santa Barbara | *B.S. Computer Engineering* Jun 2024

Relevant Courses: Machine Learning Design, Computer Vision, Deep Learning, HRDW/SFTW Interface, ASIC Design, Mobile Embedded Systems, Digital Design, Computer Architecture, Data Structures and Algorithms

WORK EXPERIENCE

Applied Materials | *Software Engineer* AIx | Python, Machine Learning Santa Clara, CA | July 2024 - Present

- Creating a data search platform to accelerate time to market for semiconductor process development.
- This platform aggregates sensor data, automatically links experiments done by process engineers to metrology results, and allows for searching or generation of new processes to accelerate R&D.
- Serving as a core developer from initial proof-of-concept (Aug 2024) to production (Feb 2025), now achieving 75% adoption in Etch division (600+ monthly users).

KLA | *Machine Learning Engineer Intern - BBP* | Python, Image Classification Milpitas, CA | June-Sept 2023

- Developed a machine-learning autoencoder using TensorFlow for BBP Nuisance Filtering, reducing cluster count by 30% in IBM CAD and Samsung GMK dataset compared to DBG2 (current implementation).
- Engineered an advanced, adaptable framework using convolutional layers, optimizing defect detection and classification across multiple datasets, specialized by training with unlabeled BBP hotspot images.
- Utilized HDBSCAN for efficient clustering of latent features, validated by silhouette scores.
- Established benchmarking with Jaccard score for effective comparison of DBG classification techniques.

Synopsys | *Application Development Intern* | Java, SQL, Data Processing Santa Clara, CA | June-Sept 2022

- Conducted performance analysis and optimized algorithms for a branching process flow resulting in a reduction of server load processing time from 10 minutes to 2.5 minutes.
- Automated contractor onboarding process saving 2,200 employee hours annually, improving system efficiency for over 2,000 users.

PROJECT EXPERIENCE

Health Monitoring Wearable – Capstone | Python, C, Java, ASIC Design Nov 2023-June 2024

- Designing a specialized health monitoring wearable for nursing home residents, focusing on comprehensive remote monitoring and enhanced data accuracy using Tableau.
- Incorporated advanced sensors in the wearable for vital signs, activity tracking, temperature monitoring, ambient noise detection, and continuous heart rate and oxygen level measurement.
- Engineered a data-efficient Android app for real-time health data visualization and trend analysis.
- Designed and manufactured a 4-Layer PCB design in Altium.

Chromatic Tuner FPGA Development | C, C++, Embedded Systems, FPGA development Jan 2023

- Engineered a tuner for precise musical note identification using optimized FFT for guitar tuning.
- Built a user-friendly GUI with interactive peripherals on a QP-nano State Machine.
- Enhanced FFT code for sub-30ms results with optimized lookup tables and hash-maps.
- Implemented a speaker for robust frequency detection across a wide range (65-4500 Hz).

SKILLS & CERTIFICATIONS

Programming Languages: Python, C++, C, SQL

Tools & Platforms: PyTorch, FastAPI, ClickHouse, TensorFlow, AWS/S3, Firebase, Git

Neural Networks and Deep Learning | *deeplearning.ai* Jan 2022