

# Snehith Nayak

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## EDUCATION

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

Graduating: Jun 2024

Emphasis on Machine Learning and Computer Programming

GPA: 3.4

Current Classes: Senior Capstone Project, HRDW/SFTW Interface, Mobile Embedded Systems, Artificial Intelligence Design

## WORK EXPERIENCE

**KLA** | *Machine Learning Software Engineering Intern*

Milpitas, CA | June-Sept 2023

- Engineered a machine-learning layout recognition autoencoder, enhancing BBP (Broadband Plasma Optical Inspection) Nuisance Filtering (detecting functional defects) and SEM sampling (E-Beam Tool verification), resulting in a 30% reduction in number of clusters when compared to DBG2 (Design Based Grouping) on IBM CAD Test Suite.
- Created a custom framework, extracting latent image features to improve defect detection and classification.
- Leveraged HDBSCAN for precise clustering of latent features, validating the integrity of groupings using silhouette scores.
- Tailored the system to diverse BBP hotspot image datasets (additionally tested on Samsung GMK dataset) by training on unlabeled data, ensuring versatility in future applications.
- Established a benchmarking method using Jaccard score and ground truth, enabling robust comparison between current and future DBG classification techniques.

**Synopsys** | *Application Development Technical Summer Intern*

Santa Clara, CA | June-Sept 2022

- Developed novel modifications to a branching process flow to reduce internal server load.
- Responsible for remodeling cross-functional integration and data synchronization between finance, payroll, and ERP system to increase employee efficiency and sync data between internal and external process flows.
- Automated contractor onboarding process saving 2,200 employee hours annually using Python and SQL.

**Chipotle** | *Staff*

San Ramon, CA | June-Sept 2021

- Managed orders, back-room inventory, and customer service.

## PROJECT EXPERIENCE

**Chromatic Tuner FPGA Development**

Jan 2023

- Developed a tuner that identifies musical notes with high accuracy, focusing on optimal sample rates for Fast Fourier Transforms across various octaves.
- Implemented a GUI LCD display using a QP-nano based Hierarchical State Machine, integrating peripherals like rotary encoders and onboard pushbuttons for user interaction.
- Enhanced the default FFT code to achieve results in <30ms by constructing sine and cosine lookup tables, dynamically adjusting sample sizes, and determining optimal FFT parameters for accurate frequency identification.
- Utilized a speaker to play frequencies ranging from 65 Hz to 4500 Hz, ensuring accurate frequency detection, minimal noise interference, and correct octave convergence using various testing modes.

**Deep Learning Emotion Recognition**

Mar 2022

- Developed a CNN-based emotion recognition system using PyTorch, achieving 82% accuracy in identifying 7 distinct human emotions from facial expressions.
- Crafted an intuitive MATLAB GUI and enriched the training dataset through web scraping with Python scripts.

**TensorFlow Predictive Analysis Stock Market Trend**

Dec 2021

- Developed a predictive model using sentiment analysis with TensorFlow framework.
- Created GUI visualization of sentiment analysis data with 10,000+ news articles.
- Utilized News APIs to relate recent company news with company performance and effect on stock.

## SKILLS

## Certifications

**Applications:** Linux, Excel, PowerPoint, Jira

**Languages:** Python, C++, C

**Cloud-Based Tech:** AWS, Firebase, Boomi

**Frameworks:** TensorFlow, PyTorch

**Technologies:** Xilinx

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

Jan 2022

**Boomi Professional Developer Certification** | *Boomi Education*

Aug 2022