HELLY CHAMPANERI

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EDUCATION

Master of Science, Computer Science (specialization in Machine Learning), University of Central Florida, **CPI : 3.96/4** May'24
Bachelor of Technology, Electronics and Communication, Nirma University, **CPI : 8.23/10** June'22

SKILLS

Areas of Interest :	Machine Learning, Computer Architecture, Software Development, Object-Oriented Programming
Programming Languages :	Python, C, C++, Java, Embedded C, Assembly, Verilog HDL
Tools and Technologies :	CodeBlocks, Spyder, Quartus II, Keil µVision, MATLAB, HTML, CSS, 8086 µP, LPC2148 µC
Technical Electives :	Data Structures and Algorithms, Artificial Intelligence, Computer Networks, Computer Architecture, Web Development, Statistics, Probabilities

WORK EXPERIENCE

Software Engineering Intern May'23-Present
Cadence Design Systems, San Jose, USA
- Responsible for implementing Deep Learning algorithms to enhance the speed and accuracy of the results generated by Spectre Circuit Simulation software.

Graduate Teaching Assistant Aug'22-May'23
University of Central Florida, Orlando, USA
- Led laboratory sessions, conducted doubt-solving meetings, graded tests and assignments for 120+ undergraduate students of EEL3801 Computer Organiazation, EEE3342 Digital Systems and EGN3373 Principles of Electrical Engineering courses.

Research Intern Jan'22-May'22
Indian Space Research Organization (ISRO), Ahmedabad, India
- Identified the metrics to be used for evaluating the quality of Raw Calibration data transmitted by SweepSAR - a Synthetic Aperture Radar which provides wide swath coverage with fine spatial resolution - in order to assess the radar's performance.
- Worked on the extraction of data received from the radar and its quality evaluation using Python programming.

System Design Intern Jun'20-Jul'20
Sudaksh Technologies, Ahmedabad, India
- Designed the circuit for effective communication between a drone and the ground station, using CC2500 IC and Sky65383-11 Front-End IC.
- Developed schematic of the circuit and designed its PCB using KiCAD EDA.

PROJECTS

Book Recommendation System (Python, Machine Learning) Mar'23
- Implemented and compared two algorithms : Item-Based Collaborative Filtering using kNN and SVD using Matrix factorization Algorithms to make personalized book recommendations to the users.

Emotion-based Music Player using CNN (Python, Neural Networks) Aug'20
- Designed a model to recognize the user's facial expressions and play the music according to their sentiment.
- Developed GUI for Music Player using Pygame and Tkinter, with various music playback functionalities (start, stop, resume, play next, play previous).

Comparison of Linear Regression Techniques for House Price Prediction (Python, Machine Learning) Nov'20
- Used Gradient Descent and Linear Regression over the Boston Housing dataset to develop ML models.
- Used RMS value, R^2 value, and average percentage error as metrics to determine the best fitting model.

Branch Prediction (Python, Neural Networks) Apr'23
- Implemented Smith, Gshare, Hybrid, Perceptron-based Brach Predictors and evaluated their performance. It was observed that Perceptron-based branch predictor had highest efficiency.

Design of Control Unit for 32-bit MIPS Processor (Verilog HDL, Quartus II) Mar'21
- Developed a control unit for MIPS - a processor based on RISC architecture - based on Single Cycle Datapath which supported 22 instructions using 11 control signals – using behavioral style modelling in Verilog HDL.

ACHIEVMENTS

- **Best Paper Award - ACECAT 2021, National Technical Conference** : Implemented and compared different entropy-based thresholding techniques for edge detection in images.
- **Scholarship Recipient** : Nirma Institute of Technology Alumni Association