

Deepak Phadtare

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Education

Stony Brook University, Stony Brook, NY

Aug 2021 - Dec 2022

Master of Science (MS) in Electrical Engineering

GPA 3.5

Coursework: Digital System Design, Embedded Systems, Stochastic Systems, Machine Learning, Image Processing

Shivaji University, Kolhapur, India

Aug 2016 - Oct 2020

Bachelor of Technology (BTECH) in Electronics Engineering

GPA 3.6

Coursework: Real Time operating Systems, Digital Signal Processing, Firmware Development, Power Supply Design

Technical Skills

- ✚ **Programming languages:** Python, C/C++, MATLAB, System Verilog, VHDL, JAVA, Embedded C, SQL
- ✚ **Tools:** LabVIEW, Git, JTAG, AutoCAD, Keil uVision, CI/CD (Jenkins), AWS
- ✚ **Microcontrollers:** Embedded Linux, FreeRTOS, μ C/OS-II, 8051, ATmega328, ARM, PIC, MIPS
- ✚ **Peripherals:** UART, RS232, RS485, SPI, I2C, Bluetooth/BTLE4.0+, Wi-Fi, ZigBee
- ✚ **Interfaces:** ADC, DAC, USB, PWM, FLASH, DDR3 memory, EEPROM

Work Experience

Stony Brook University

Stony Brook, NY

Research Assistant – Digital System Design

Feb 2023 - Present

- ✚ Automated the hardware generation process for multi-layer convolution systems by developing a C++ tool, resulting in a 40% decrease in power consumption.
- ✚ Executed the synthesis of the RTL design into System Verilog, meticulously optimizing for area, timing, and power requirements, and achieved a remarkable operating frequency of 1538 MHz.
- ✚ Increased system throughput from 85M ip/sec to 150M ip/sec by implementing pipelining and parallel processing units with optimized memory utilization.

Bharat Software Solutions

Pune, India

Data Science Intern

Jan 2021 - Jun 2021

- ✚ Developed a predictive model for targeted marketing utilizing K-means clustering, resulting in a 15% improvement in customer segmentation accuracy.
- ✚ Processed and analyzed a 2 million customer transaction dataset efficiently with PySpark, ensuring seamless handling of big data and accurate interpretation.
- ✚ Collaborated with cross-functional teams to deploy an automated data pipeline using AWS, Snowflake, and Airflow, reducing data processing time by 30%.

Projects

Object Sorting System

[Python, Verilog, UART, Xilinx Vivado, ModelSim, Arduino IDE]

- ✚ Implemented an efficient object sorting system achieving throughput of 12 objects per minute by integrating a robotic arm, conveyor belt, and real-time image processing on Xilinx FPGA.

Drone Control System

[C++, Raspberry Pi Simulator, Bluetooth, Oscilloscope, Adafruit Circuit Playground]

- ✚ Accomplished autonomous drone control with precise flight stabilization, obstacle detection, and path planning, by utilizing a C++ based Real time operating system on Raspberry Pi for seamless task scheduling and sensor fusion.

Home Voice Assistant

[Python, C++, TensorFlow, Jupyter Notebook, AutoCAD]

- ✚ Designed a cost-effective wake-word detection system with 95% accuracy, utilizing TensorFlow Lite Micro on Arduino Nano RP2040 Connect, and offering comparable functionality to Alexa's action triggers.

Leadership and Academic Experience

Graduate Assistant, Stony Brook University, NY

Aug 2022 - Dec 2022

- ✚ Facilitated comprehensive support to 200+ library patrons, composed 130+ emails to communicate student requests and issues with respective departments.

Teaching Assistant - ESE224 (Advanced Programming in C++), Stony Brook University, NY

Aug 2021 - Dec 2021

- ✚ Collaborated with a team of 5 TAs to lead recitations, grade coursework, facilitate weekly lab sessions for a group of 30 students, and held regular office hours.

President - Electronics Student Association, Shivaji University, India

Jan 2018 - Jun 2019

- ✚ Led and organized the Robotic Fight Event with a \$1,000 budget, coordinating 15 volunteers. Conducted engaging workshops for 100+ participants in EAGLE PCB design, LabVIEW GUI development, and Proteus circuit simulation.