

Shaurya Haridas

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Education

- **Master of Science in Electrical Engineering, Syracuse University, USA** May 2020
- **Bachelor of Engineering in Electronics, Mumbai University, India** May 2017

Technical Skills

- **Languages** C, C++, Python, Verilog, Perl
- **Frameworks and Libraries** NumPy, PyTorch, TensorFlow, OpenCV
- **Tools** Visual Studio, VS Code, TFS, GIT, Source Control, GitHub, MATLAB, AutoCAD, P-SPICE, H-SPICE, e-plan, Synopsys Tools (Design Vision, Tetramax, Formality), NuSVM, Intel (Quartus, Altera), ModelSim, Keil u-Vision, Xilinx Vivado

Academic Projects

Design and Implement of NALU (Python 3, TensorFlow, NPL) May 2020

- Implemented Neural Arithmetic Logic Units to learn to multiply all the numbers in an array in Python using NumPy and TensorFlow.
- Used tanh and saturated sigmoid for implementation.
- Used training data set containing 50000 arrays of size 3, 4 and 5.

Verification of synchronous FIFO (SystemVerilog Assertions) Apr 2020

- Designed and Verified FIFO for various conditions using a testbench.
- Checked conditions such as Empty to Full, Full to Empty, Read when Full and Write when Empty.

Implementation of Hopfield Network (Python, NumPy) Feb 2020

- Implemented and trained Hopfield networks for patterns vectors in $\{0,1\}^8$ which are represented in NumPy library.
- Wrote code for learn, update and energy functions to implement Hopfield Network.
- Calculated and implemented energies as to strain the Hopfield network.

Unscramble Data Files using Python (Python 3, Data Structures) Oct 2019

- Wrote a code to efficiently sort thousands of lines of data in a telephone records and return required outputs.
- Designed five functions to perform different tasks such as calling and sorting the data.

Object Detection using Haar Cascade (Python 3, OpenCV, Linux) Feb 2019

- Implemented Intel predeveloped cascades for detecting face and eyes in Python and Git.
- Designed and implemented an 8 – stage Haar Cascade to detect an object (Sports Shoes) using OpenCV.
- Used Linux to run the OpenCV directory.
- Used IP Camera on an Android phone to as camera input.

Design a Built in Self-Test Tool (Verilog, ModelSim, Tetramax) Nov 2018

- Designed a BIST tool in Verilog, consisting of a PRPG, MISR and Controller. Designed tool so it creates a golden signature out of random generated binary codes and then checks if a particular circuit produces the same results.
- Used ModelSim and Tetramax for synthesis of the design and testing.
- Simulated faults for ALU using ATPG for comparison.

Work Experience | Experience: 6 months

- Rich experience in developing and upgrading windows-based application. Extremely proficient in writing, analyzing, and optimizing complex stored procedures and functions.
- Initiated and Implemented business value added services to reduce the effort and increase the productivity.
- Excellent understanding and experience in Software Development Life Cycle (SDLC) and Agile Methodology.

Intern | Syracuse University, Syracuse Jul 2020 - Present

- Study and implement hardware algorithms for VLSI CAD tools in C++.
- Develop CAD tool for routing and placement of digital VLSI design.
- Design and implement 16-bit RISC based CPU with x86 architecture in Verilog.

Engineering Trainee | TAL Manufacturing Solutions (TATA), Pune Jan 2018 – Jun 2018

- Worked with PLCs, Controllers, micro controllers and modified electrical drawings to newer versions in e-plan and AutoCAD.
- Reduced the time per drawing for 2 days to 1 day.
- Administered the applications of the electrical drawings.
- Trained interns to get them up and running in two weeks during my final month at the company.