

DARSHIL R. TRIVEDI

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Research team: <http://ubmixedsignals.eng.buffalo.edu/index.php/members/> | Portfolio: <https://darshiltrivedi.github.io/>

EDUCATION:

Master of Science in Electrical Engineering

University at Buffalo, The State University of New York-Buffalo

Aug'19-Feb'21

3.85/4.00

Bachelor of Engineering, Electronics Engineering

The Maharaja Sayajirao University of Baroda, India

Aug'15-May'19

3.58/4.00

SKILLS & TOOLS:

Languages: Python, C, C++, Assembly Language, Embedded C, VHDL, Verilog, System Verilog, SQL.

Tools: Cadence Virtuoso, Matlab, LABview, EAGLE PCB, KiCad, Vivado, Altera Quartus, ModelSim, Android Studio.

Technical Skills: Neural Networks, Reinforcement Learning Linear Algebra, Linear & Logistic Regression, Fuzzy Logic.

Certifications: Python for Everybody Specialization, TensorFlow in Practice Specialization by deeplearning.ai,
SQL for Data Science, Visualization with Tableau.

PROFESSIONAL EXPERIENCE:

Engineering Intern, Siemens India Pvt. Ltd.

May'18- July'18

- Acquired basic knowledge of PLC and performed ladder logic simulations on siemens simatic to optimize the process.
- Researched and tested 7 different type of sensors & gauges and did competitive analysis of sensor working.

Analog/Mixed Signal VLSI Group | University at Buffalo

Jan'20-May'20

- Researched and Coined an output capacitor-less low dropout voltage regulator in 65-nm CMOS Technology.
- Designed a Reference Voltage for LDO which was a Subthreshold Voltage Reference with scalable output voltage.
- Developed RTL-level logic and MOSFET-level layout to perform different analysis using Cadence Virtuoso.
- Enhancement in Load & Line regulation, Temperature Compensation and cost reduction was obtained compared to previous result.
- Chip area was reduced to 1/3rd of existing technology, resulting in LDO for SoC usage.

ENGINEERING PROJECTS:

Big Data Analytics and Image Recognition | University at Buffalo

Jan'19-May'19

- Implemented Perceptron, SVM, Linear & Logistic Regression, k-NN, Random Forest and K-means from scratch on MNIST and Fashion MNIST datasets and applied 10-fold cross validation to get a maximum accuracy.
- Employed a CNN based model for Image Recognition using AlexNet architecture. Strategic initiatives were taken in existing CNN to get a better accuracy. Top-5 accuracy of around 68% was obtained for oxford17 dataset.
- Predicted data set using reinforcement Learning, Q & double-Q, transfer learning and convolution neural networks.

FPGA Calculator | University at Buffalo

Jan'20-May'20

- Built a FPGA Calculator with help of Basys3 board. VHDL as Language in Vivado tool was exercised for this project.
- Execution of simple arithmetic operations and logic left shift between 2 decimal operands was achieved using calculator and results were displayed on 7-segment display.
- Different push buttons on basys3 were used to store operands and select operations to be performed.

Volumetric Display using LASER | The Maharaja Sayajirao University

July'18-March'19

- Generated a virtual 3-D volumetric display from it's 2-D version on a smoke screen utilizing LASER technology.
- Created LASER galvanometer scanner and closed loop Servo amplifier that reflects the LASER beam to form continuous image on smoke screen.
- Fabricated Servo amplifier on PCB deploying op-amps and coupled it to PD Controller circuit with capacitive feedback.
- Depth of 2D image on smoke screen was controlled using LASER Intensity control circuit.

Arduino and 8051 Micro-Controller | The Maharaja Sayajirao University

Aug'15-Mar'18

- Constructed a RC- Car using Bluetooth module HC-05 and Arduino that can be operated with smart phone or laptop.
- Interfaced 2 stepper motors in X and Y direction employing 8051 microcontroller to draw different geometric shape.

Real Time Sensor Data Collection App | University at Buffalo

Aug'19-Oct'19

- Formulated & presented an Android Application to collect real time sensor data and verify data.

LEADERSHIP EXPERIENCE:

Paramarsh-Ideas Infinite (A National Level Non-Technical Event of MSU-FTE)

- Spearheaded event with a footfall of 20000 and website hits of 50000 in a year.
- Led a team of 100 through partnership, sponsorship and event management domains.
- Shepherd Anti-Tobacco campaign in partnership with 'Faith Foundation' in University campus, under the banner of "Sanidhya-Awareness for Society" in order to spread awareness about the ill-effects of tobacco consumption.

WORK AUTHORIZATION:

- (Visa) Eligible to work in U.S for Full-Time without sponsorship on OPT for 36 months.