# DARSHIL R. TRIVEDI

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## EDUCATION:

**Master of Science in Electrical Engineering | August 2019–Feb 2021** *GPA* **- 3.85/4.00**
*University at Buffalo, The State University of New York-Buffalo*

**Bachelor of Engineering, Electronics Engineering | August 2015-May 2019** *GPA* – **3.58/4.00**
*The Maharaja Sayajirao University of Baroda, India*

## SKILLS & TOOLS:

**Soft Skills:** Proactivity, Leadership, Management, Decision Making, Inquisitiveness
**Languages:** Python, C, C++, Assembly Language, Embedded C, VHDL, Verilog, System Verilog.
**Tools:** Cadence, Matlab, LABview, Eagle PCB designing, KiCad EDA, Vivado by xilinx, Android Studio.
**Technical Skills:** Neural Networks, Reinforcement Learning Linear Algebra, Linear & Logistic Regression, Fuzzy Logic.

## VOCATIONAL TRAINING:

**Engineering Intern, Siemens India Pvt. Ltd.** May'18- July'18

- Researched and tested all the different type of temperature sensors & pressure gauges and their working.
- Acquired basic knowledge of PLC performed ladder logic simulations on siemens simatic to optimize the process.

## ENGINEERING PROJECTS:

**Output-Capacitorless LDO and A subthreshold voltage reference | University at Buffalo** Jan'20-May'20

- Researched and designed an out capacitor-less low dropout voltage regulator in 90-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.
- Significant improvement in Load & Line regulation, Temperature Compensation and lower Chip area was obtained compared to previous result, resulting in LDO for SoC usage.

**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 the AlexNet architecture. Many tweaks were made in the existing CNN to get a better accuracy. Top-5 accuracy of around 68% was obtained for oxflower17 dataset.
- Reinforcement Learning, Q & double-Q learning, Transfer Learning and Convolution Neural Networks were the Machine Learning models being employed.

**FPGA Calculator | University at Buffalo** Jan'20-May'20

- Built a FPGA Calculator using Basys3 board. VHDL as Language in Vivado tool was used for the project.
- The Calculator was able to perform simple Arithmetic operations as well as logic left shift between 2 decimal operands entered using slider switches. The operands 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 | M.S. University** July'18-March'19

- Generated a virtual 3-D volumetric display from it's 2-D version on a smoke screen using LASER technology.
- For this we built LASER galvanometer scanner and closed loop Servo amplifier which reflects the laser beam to form continuous image on smoke screen. The Servo amplifier Board (PCB) was built using op-amps and was coupled to PD Controller circuit with capacitive feedback.
- Laser Intensity control circuit was built to control the depth of the 2D image on smoke screen.

**Arduino and 8051 Micro-Controller | M.S. University** 2015-2018

- Constructed a car using Bluetooth module HC-05 and Arduino which can be operated with smart phone or laptop.
- Interfaced 2 stepper motors in X and Y direction using 8051 microcontroller to draw different geometric shape on the graph lying on the chassis.

**Real Time Sensor Data Collection App | University at Buffalo** Aug'19-Oct'19

- Designed an Android Application to collect real time sensor data and test & verify the data.

## POSITION OF RESPONSIBILTY:

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

- Spearheaded the event which had a footfall of 20000 and website hits of 50000 in a year.
- Successfully led the teams in partnership, sponsorship and event management domains.
- Successfully coordinated a team of 6 members in database and scheduling domain.
- Completed the event scheduling of 15000 participants in record time span of 3 days.
- Hosted an event named Block n Tackle, basically a debate competition with different Audio-Visual Rounds.

## CERTIFICATIONS:

**Python for Everybody Specialization** by University of Michigan
**TensorFlow in Practice Specialization** by deeplearning.ai

## AREAS OF INTEREST:

Embedded system design, VLSI designing (VHDL & Verilog programming), FPGA logic design, Implementation of communication protocols, Eagle PCB designing, Data Analysis, Industrial Automation and Control, Instrumentation & measurement.