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	Aug 2019-Feb 2021
University at Buffalo, The State University of New York-Buffalo	**3.85/4.00**
Bachelor of Engineering, Electronics Engineering	Aug 2015-May 2019
The Maharaja Sayajirao University of Baroda, India	**3.58/4.00**

SKILLS & TOOLS:

Languages: Python, C, C++, Assembly Language, Embedded C, VHDL, Verilog.
Tools: PyCharm, PyQT5, MATLAB, LabVIEW, Arduino, Keil uVision, ACE, EAGLE PCB, KiCad, LTspice, Cadence Virtuoso.
Technical Skills: Debugging Communication protocols, Handling Oscilloscope, APx Audio Analyzer and other Lab equipment.
Certifications: Python for Everybody Specialization, TensorFlow in Practice Specialization by deeplearning.ai,
SQL for Data Science, Visualization with Tableau**.**

PROFESSIONAL EXPERIENCE:

Product Applications Engineer, Analog Devices, Ireland.   March 2024-Till Now
- Architectured and implemented robust, scalable platforms for product validation, evaluation, and demonstration, optimizing efficiency and reducing time-to-market.
- Contributed to successful silicon bring-up and product launch by collaborating with multidisciplinary teams, such as Evaluation, Design, Design Verification, and Test teams, to identify and resolve critical design and implementation issues.
- Deepened understanding of class-D audio amplifier by Contributing to the design, development, and functional testing.
- Authored comprehensive technical documentation, including datasheets, Register Manuals, specifications, and user guides, ensuring clear communication and regulatory compliance.
- Gained valuable experience in firmware development and hardware-software integration by collaborating with firmware teams to develop HAL layers for next-generation touch controller blocks.

Field Applications Engineer, Analog Devices Inc.   March 2021-Feb 2024
- As a Field Applications Engineer (FAE), working as a bridge by connecting end customers to Analog Devices technology.
- Providing help in system level designing to customer projects related to embedded systems and MEMS technology.
- Working with customers throughout the life cycle of their product/project and help them in creating next gen technology.
- Test and verify evaluation boards/systems to create a better user experience for customers.
- Working with application engineering team, evaluated & tested specification on datasheets and software user guides
- Developed python API, MATLAB toolbox and example codes of ADI products for internal product line team and System Development Group.
- Collaborated with other new college graduate to perform a full embedded product development which included designing a smart chair to determine the ergonomics of a person.
- Provided technical support to customers with the chip recommendation, optimum use of the chip and design review.
- Worked with other FAEs on Audio Automotive Bus(A2B) to improve in-cabin audio and user experience.

Graduate Researcher Assistant, Analog/Mixed Signal VLSI Group   Jan 2020-May 2020
- 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 MOSFET-level schematics and layout to perform different analysis using Cadence Virtuoso.
- The LDO was used to drive 5-bit SAR ADC to achieve an SNDR of 28.934.

ENGINEERING PROJECTS:

Echo Generation using MATLAB   Jan 2020-May 2020
- Generated echo in an audio using principles of Digital/Mixed signal processing and musical sound processing in MATLAB.

FPGA Calculator   Jan 2020-May2020
- Built a FPGA calculator with help of Basys3 board. VHDL as language in vivado tool was exercised for this project.

Big Data Analytics and Image Recognition   Jan 2019-May 2019
- 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 keras and TensorFlow API in python. Strategic initiatives were taken in existing CNN to get a better accuracy. Top-5 accuracy of around 68% was obtained for oxflower17 dataset.

Volumetric Display using LASER   July 2018-March 2019
- Developed a LASER projector from scratch doing market research, prototyping, product designing and testing.
- Created LASER galvanometer scanner and closed loop servo amplifier motor controller, that reflects the LASER beam to form continuous image on smoke screen.
- Fabricated servo amplifier board doing schematic and PCB layout, deploying op-amps and coupled it to PD controller circuit with capacitive feedback.

Arduino and 8051 Micro-Controller   Aug 2015-Mar 2018
- Prepared a model to produce sinusoidal waves of 4 different frequencies, supplied from a signal generator and harmonics using an 8051-microcontroller connected to a 16x2 LCD, DAC 0808, 2 switches and a oscilloscope (CRO).
- Interfaced 2 stepper motors in X and Y direction employing 8051 microcontrollers to draw different geometric shape.
- Prototyped a proximity sensor based Smart traffic light System using ARM Cortex controller.

LEADERSHIP EXPERIENCE:

Analog Devices Inc.
- Served as the primary customer interface, driving customer satisfaction and loyalty through exceptional technical support and guidance.
- Presented complex technical information to diverse audiences, including engineers, management, and customers, tailoring communication to specific needs and ensuring clear understanding.

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.