

Sridhar Sivapurapu

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EDUCATION

GEORGIA INSTITUTE OF TECHNOLOGY, Atlanta, Georgia

August 2016-Present

Overall GPA: 3.60/4.0

Candidate for Doctoral Degree in Electrical Engineering (Master's Completed)

- Coursework: Applied Electromagnetics, Wireless IC Design, Microelectronics Technology, Microwave Design, Analog Systems Design, Theory of Electronic Devices, Interface IC Design, Microelectronics Systems Packaging, Antenna Engineering, Statistical Machine Learning, Computational Electromagnetics, Packaging Substrate Fabrication

GEORGIA INSTITUTE OF TECHNOLOGY, Atlanta, Georgia

December 2015

Bachelor of Science in Electrical Engineering

Overall GPA: 3.58/4.0 Major GPA: 3.62/4.0

- Relevant Courses: Analog Electronics, Semiconductor Devices, Analog Circuits for Music Synthesis, Antenna Engineering, Electronic Packaging, Analog Integrated Circuits, Audio Engineering

EXPERIENCE

Georgia Institute of Technology, Atlanta, Georgia

Graduate Research Assistant

August 2017-Present

- PRC; C3PS; NextFlex; SRC; Mixed Signal Design Group.
- Designing, modeling, fabricating, and testing inductors, antennas, transmission lines, and capacitors for FHE and IoT edge applications.
- Designing, modeling, fabricating, and testing a 24 GHz Automotive Doppler Radar on ultra-thin flexible glass, including assembly of components onto thin glass, bending glass, and full system integration to include couplers, mixers, antenna arrays, and corresponding amplifiers.
- Implementing Machine Learning techniques (Neural Networks, Guassian Process, etc.) for Process Design Kit (PDK) development with FHE technology.
- Designing SiP module for low power IoT edge applications integrating energy harvesters, power management, on package passives, and load devices.

Intel Corporation, Chandler, Arizona

Analog Engineer Intern

May 2018-August 2018

- Created Machine Learning models for different package architectures for internal use
- Designed workflow to integrate future architecture designs into new Machine Learning models and internal tools
- Optimized designs using Machine Learning algorithms

Keysight Technologies, Colorado Springs, Colorado

Technical Intern II (ASIC Design)

May 2017-August 2017

- Measured and modeled responses for different feed techniques for ICs using VNA (up to 67 GHz) focusing on isolation.
- Top Level verification (created models and test benches) for preamplifier circuit for oscilloscope and Digitizer for VNA including distortion, stability, gain settings, etc.
- Completed Over Voltage Detection circuit integration with remaining IC for proper Top Level performance.
- Led design reviews for both feed techniques and Top Level verification.

Georgia Institute of Technology, Atlanta, Georgia

Graduate and Undergraduate Teaching Assistant

August 2015-December 2015 and August 2016-May 2017

- ECE 3043: Electronics and Electronics Laboratory, ECE 4445: Audio Engineering, ECE 4446: Audio Engineering Laboratory
- Verified that students properly complete laboratory steps and assist students with SPICE/CAD modeling and theoretical calculations for proper circuit operation.
- Taught students how to use equipment such as oscilloscopes, function generators, digital spectrum analyzers, and impedance analyzers.
- Created lab quizzes and graded assignments such as lab reports, homeworks, and quizzes.
- Led review sessions before every class and exam.

Keysight Technologies, Colorado Springs, Colorado

Technical Intern II (ASIC Design)

January 2016-June 2016

- Designed and laid out an Over Voltage Detection Block using translinear circuits for a 50 Ohm oscilloscope Pre-Amplifier input.
- Led design reviews for Over Voltage Detection Block inside of the Pre-Amplifier.
- Created verification models and test benches for the Digitizer for an RF chip designed for a VNA.

Texas Instruments, Dallas, Texas

Analog Design Engineering Intern

May 2015-August 2015

- Worked with four different products in Advanced Protections for Motor Drivers to meet new safety compliances.
- Modeled different blocks inside of chips using verilogams to improve simulation speeds.
- Designed tests to ensure meeting safety compliances and debugged customer concerns about product working conditions.

Georgia Institute of Technology, Atlanta, Georgia

Intel/SRC Opportunity Research Scholars (ORS) Program

September 2013-April 2015

- Researched in the Mixed Signal Design Group, specifically researching methods of decreasing simultaneous switching noise in PCBs to improve signal and power in high-speed digital systems.
- Simulated two circuits designed to improve signal and power in Advanced Design System.
- Created technical presentations about research and presented to faculty and peers and write research papers and proposals.

SolarMax, Norcross, Georgia

Engineering Intern

May 2014-August 2014

- Designed new inverter circuit topology (5/3 level) for future development on products.
- Tested various designs with a different choke and a different IGBT module to be implemented into the field.
- Designed a thermal model for a PV panel to accurately assess how the inverter would work in different environments.

TECHNICAL PROJECTS

Low Power Analog Front End

Spring 2017

- Designed Low Power (<1 mW) Front End Integrated Circuit for Audio Detection in joint movements in the knee in both simulation and layout (ADC).
- Utilized the following circuits in the design: 12th Order Bandpass filter (6th order high and low pass filter cascaded) for desired frequency range, Low Noise Front End Amplifier (total gain of 63 dB) for data conversion, 8-bit SAR ADC to be send audio data to user, and LDO for power regulation.
- Performed design reviews and presentations for project and wrote multiple papers discussing project throughout semester.

Wide-Band Direct Downconversion Receiver (RX)

Fall 2016

- Designed RX architecture to meet specifications and adhere to an inductance budget.
- Utilized the following RX stages in sequential order: Single-ended noise cancellation common-gate stage, active balun, and differential double-balanced active mixer.
- Performed simulations to verify the following specifications: Noise Figure, S-parameters, Conversion Gain, Frequency Bandwidth, Power 1 dB compression point, 3rd order intercept point, and power consumption.

Smart Insole (Senior Design)

January 2015-December 2015

- Designed a shoe insole that delivers pressure and temperature data to diabetic patients to help prevent foot ulcers.
- Created a PCB to interface between sensors and CC2650 microcontroller daughter card to transmit data from insole to user.
- Received "Golded Ticket" for Georgia Tech Inventure Prize (Georgia Tech Invention Competition).

SELECTED PUBLICATIONS

- **S. Sivapurapu**, C. Mehta, R. Chen, Y. Zhou, M. Bellaredj, X. Jia, P. A. Kohl, T. Huang, S. K. Sitaraman, M. Swaminathan, "Multi-physics Modeling Characterization of Aerosol Jet Printed Transmission Lines," 2018 IEEE MTT-S International Conference on Numerical Electromagnetic and Multiphysics Modeling and Optimization (NEMO), Reykjavik, 2018, pp. 1-4.
- **S. Sivapurapu**, R. Chen, C. Mehta, Y. Zhou, M. L F Bellaredj, X. Jia, P. A. Kohl, T. Huang, S. K. Sitaraman, M. Swaminathan, "Multi-physics Modeling & Characterization of Components on Flexible Substrates," in *IEEE Transactions on Components, Packaging and Manufacturing Technology*.
- N. Aslani Amoli, **S. Sivapurapu**, R. Chen, Y. Zhou, M. L. F. Bellaredj, P. A. Kohl, S. K. Sitaraman, M. Swaminathan *et al.*, "Screen-Printed Flexible Coplanar Waveguide Transmission Lines: Multi-physics Modeling and Measurement," *2019 IEEE 69th Electronic Components and Technology Conference (ECTC)*, Las Vegas, NV, USA, 2019, pp. 249-257.
- Y. Zhou, **S. Sivapurapu**, R. Chen, N. Aslani Amoli, M. Bellaredj, M. Swaminathan, S. K. Sitaraman, "Study of Electrical and Mechanical Characteristics of Inkjet-Printed Patch Antenna Under Uniaxial and Biaxial Bending," *2019 IEEE 69th Electronic Components and Technology Conference (ECTC)*, Las Vegas, NV, USA, 2019, pp. 1939-1945.

SKILLS

Software: MATLAB, HFSS, Cadence, Advanced Design System, Momentum, EMPro, LabView, Octave, C++, Computer Simulation Technology, Mathcad, LTspice, MULTISIM, EAGLE, verilogams, veriloga, PADS

Instrumentation: Experience with oscilloscope, power supply, function generator, MYDAQ, power meter, mbed microcontroller, multimeter, load bank, CC2650 microcontroller

ACTIVITIES/AWARDS

Awards:	2nd Place Research Award (ORS)	April 2014
	Dean's List	December 2012-Present
	Inventure Prize Semifinalist	December 2015