Michael B. Eller

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Summary

I am an engineering professional, specializing in electrical and computer engineering, computer science, and materials science. I have lead a variety of projects from web development to embedded computing and PCB design to successfully fabricating SIS Josephson tunneling junctions. Extremely dedicated to every project, I am eager to take on new challenges, and I hope to shape a career in RF and microwave engineering.

Research and Work Experience

Current, from July 2017

Graduate Research Assistant

UVML Superconducting Materials and Devices

Developed processing techniques in the University of Virginia Microfabrication Laboratories (UVML) under the direction of Dr. Arthur Lichtenberger. Involved in many projects within the superconducting materials and devices group; however, the main area of focus has been whole-wafer cryogenic screening. In order to quickly and efficiently evaluate superconducting devices, a 4K compatible DC probe is currently being developed.

May 2015 – May 2017

Undergraduate Research Assistant

University of Virginia Far Infrared Receiver Lab

Under the direction of Dr. Robert Weikle, worked on the THz coded aperture imaging project in the UVa FIR Lab. Gained valuable experience with quasi-optical systems and the precise alignment of said systems. Became familiar with RF/microwave engineering measurement and calibration techniques. Used scikit-rf, an open-source python software package created for RF and microwave engineering.

Projects

Coil Gun

Capstone Design Project

Worked on a five person team to design and build a working coil gun, or Gauss rifle. This served as the capstone design project required for graduation. I worked primarily on embedded circuit design and simulation.

Oxford Endpoint

Custom embedded solution for laser endpoint monitoring

Built a stand-alone custom solution for the Oxford RIE system in the UVML. Users wished to monitor the laser signal independent of the aging computer software used to control the tool. Using a single-board computer and an ADC, I developed a signal monitor capable of plotting the signal and it's differential derivative in real time.

Education

July 2017 – Present — **Master of Science**
GPA: 3.82
Electrical Engineering
University of Virginia

August 2013 – May 2017 — **Bachelor of Science**
Computer Engineering
University of Virginia

Publications

2017 *International Microwave Symposium*
Primary Author
A Monostatic Coded Aperture Reflectometer for Imaging at Submillimeter-Wavelengths.

2018 *Applied Superconductivity*

Optical Spectroscopic Study of AlN-Based SIS devices Grown by Inductively Coupled Plasma

Effect of Post Deposition Annealing on the Structural and Electrical Properties of NbTiN Thin Films Deposited by Reactive Bias Target Ion Beam Deposition Technique

Awards

2017 **Louis T. Rader Chairpersons Award**
Best Capstone
University of Virginia

Computer Skills

Advanced Knowledge	python, C++, Linux
Intermediate Knowledge	html, LaTeX, CSS, SQL, VHDL, C, Java, Javascript, PHP
Basic Knowledge	Matlab, Mathematica, ANSYS Electromagnetics