Jacob C. Ruff

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Education

Texas A&M University, *College Station, TX* GPA 4.0/4.0
Graduating: May 2022
In progress, Bachelor of Science - Electrical Engineering
Minor in Computer Science

Employment

Johns Hopkins Applied Physics Lab, *Laurel Maryland* May 2020 - December 2020
Digital Signal Processing Intern
Adapted model of received vs transmitted radio symbol rate to linear splines for real time conversion
Improved Simulink model of a radio's carrier and code loops making it HDL synthesizable
Produced a tutorial for installing and compiling radio software

Paragon Innovations, *Richardson Texas* Sept 2017 - Dec 2017, Dec 2018
Engineering Intern
Verified circuit boards functionality and assured there was no electric shorting.
Purchased inventory based on project and individual engineers' needs
Assembled various prototype boards and products

University of Texas at Dallas, *Richardson, TX* June 2017 - August 2017
High School Intern with the Science, Engineering and Education Center
Led creation of instructional manuals for teaching kids how to program
Assisted in instructing beginner's Python class.

Activities

Ultrasound Research, *Texas A&M University* May 2021 - Present
Undergraduate Researcher
Producing speckle decorrelation curves to create 3D reconstructions from freehand ultrasound probe
Simulating speckle and phantoms using Field II in Matlab
Modeling decorrelation curves based off the phantom simulations done in Matlab

HowdyHack Hackathon, *College Station TX* Sept 2019
Team Leader
Produced a phone app that communicated with an Arduino over Bluetooth to control a circuit
Wrote Arduino C code that handled serial input communicated via Bluetooth

Computer Science Competitions, *College Station TX*
Competitor
Participated in TAMU Fall 2018 and Spring 2019 competitions
Participated in the North American Invitational Programming Competition
Competitions improved problem solving ability utilizing algorithmic design

Graduate Coursework

ECEN 646 Probablitiy for Information Science

Undergraduate Coursework

CSCE 221 Data Structures and Algorithms
ECEN 412 Ultrasound Imaging
ECEN 447 Digital Image Processing
ECEN 455 Digital Communications

Skills

Proficient with Matlab, Python, C, C++ , Latex, Linux