

## John Button

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### Education

Duke University, Durham, NC — Expected Graduation Spring 2027

Notable Achievements: College Board Rural and Small Town Recognition Program Award

### Technical Skills

- **Design & Modeling:** AutoCAD, SolidWorks, Kicad, Onshape, Altium, and CST Studio
- **Programming:** Arduino, C, Verilog, Matlab, and Python
- **Tools :** Oscilloscope, FPGAs, Microcontrollers,
- **Certifications:** Ham Radio Technician (KM4PBS) and OSHA 10-Hour Construction

### Experience

- **RF Research, Durham, NC — Undergraduate Researcher,** Nov 2025 – Present,  
Developing an antenna array optimization tool to maximize field of view and resolution by analyzing array geometries in the Fourier domain. Model spatial frequency coverage and simulate image reconstruction to evaluate performance tradeoffs across configurations, using Python to visualize and compare imaging performance across array designs.
- **Sure Depth Instruments, Durham, NC — Engineering Lead,** Nov 2025 – Present,  
Led electrical design for a novel measurement system, including PCB development and prototyping.
- **Nation of Makers, Remote — Student Leader,** June 2017 – Nov 2025  
Led hands-on exhibits in 3D printing and maker project development, mentoring students in robotics and engineering while supporting local STEM initiatives and helping communities access maker resources.
- **IME South, Charlotte, NC — Speaker and Organizer,** June 2022  
Coordinated multiple engineering panels for the IME South conference, managing speakers and session logistics while contributing insights on the maker movement's role in industry.
- **eNable, Remote — Course Instructor,** June 2021 – July 2021  
Designed and led small-group courses (~10 students) on Onshape and OpenSCAD, helping eNable train new volunteers to create low-cost, 3D-printed prosthetics.
- **Local Motors, Oxon Hill, MD — Intern,** June 2017 – May 2019  
Worked on Micro Olli, a demo-scale version of the company's autonomous shuttle, performing hardware support and improvements; led CAD training sessions; and assisted in fundraising efforts for local nonprofits.

### Relevant Projects

- **Duke Electric Vehicles —** Designed and tested multi-layer PCBs in Altium Designer for power distribution systems, emphasizing signal integrity and manufacturability.
- **Antenna Simulation —** Modeled and optimized various antennas in CST Studio Suite to analyze impedance matching, gain, and far-field radiation patterns.
- **Richmond Amateur Telecommunications Society (ARRL-affiliated) -** Worked with a local amateur radio club on radio systems and antenna setups, applying RF concepts such as impedance matching, signal propagation, and frequency band optimization in practical environments.

**Relevant Coursework -** Microelectronic Devices & Circuits (ECE 230), Linear Algebra (Math 218), Signals & Systems (ECE 280), Fundamentals of ECE (ECE 110), Fields & Waves (ECE 270), Electromagnetic & Antenna Theory (ECE 370), Control Systems (ECE 382), Digital Systems (ECE 350)