

**CONTACT**

XXXXXX XXXXX XX  
XXXXXX, XX XXXXX  
Cell: (865)-405-8662  
Email: [kptrofatter@gmail.com](mailto:kptrofatter@gmail.com)  
URL: [www.parkertrofatter.com/](http://www.parkertrofatter.com/)  
LinkedIn: [www.linkedin.com/in/kptrofatter/](http://www.linkedin.com/in/kptrofatter/)

**EDUCATION**

*Duke University, Durham, NC*  
Ph.D. Electrical Engineering 2022

*University of Tennessee, Knoxville, TN*  
B.S. Engineering Physics 2011  
B.S. Computer Science 2011

**SKILLS***Electrical Engineering*

- Electromagnetic theory
- Computer architecture
- Microwave engineering
- Electronics
- Embedded systems
- Microcontrollers: Arduino devices
- FPGA: Altera devices using VHDL

*Software Engineering*

- OS: Linux, Windows
- Languages: C, C++, Python, Java, MATLAB, bash, CUDA, assembly
- Web: HTML, CSS, JavaScript, LAMP
- Version control: Git
- Debugging, testing, documentation
- Data structures and algorithms
- Systems programming
- Multithreaded programming
- Parallel computing
- Cross-platform programming
- Computer graphics
- Machine vision
- Machine learning

*Manufacturing*

- CAD: SolidWorks, KiCad
- 3D printing
- PCB manufacturing

*Technical Communication*

- Graphics: Blender, Inkscape, GIMP
- Desktop publishing: LaTeX, JabRef

**PROFESSIONAL SUMMARY**

Multidisciplinary research engineer that applies software engineering to laboratory work and scientific computing. Specializes in electromagnetism and computational imaging, but is generally fluent in physical and mathematical modeling. System builder driven to create and understand all parts of solutions to interesting problems. Excellent reverse engineer. Enjoys collaboration.

**GENERAL SKILLS**

- Software engineering
- Scientific computing
- Computational imaging
- Reverse engineering
- Rapid prototyping

**RESEARCH EXPERIENCE***Duke University, Durham, NC*

Associate in Research, Graduate Fellow 2013-2018

- Collaborated to build walk-while-scan mm wave scanner
- System integrator
- Developed UI, GUI, data visualization
- Research lead on depth sensor fusion, image stitching
- Researched system registration, calibration, acceleration
- Prepared technical reports for consumption by people of various levels of technical expertise
- Gave presentations to program managers at major reviews

**PROFESSIONAL EXPERIENCE***Neurophos Inc., Durham, NC*

Consultant 2022

- Implemented cross-platform multithreaded Thorlabs APT controller USB host in C with a high-level Python interface
- Began researching interferometer wavefront calibration
- Implemented remote experiment operation
- Participated in technical discussions

**TEACHING EXPERIENCE***Duke University, Durham, NC*

TA, ECE 590 Math and Physics in Imaging 2018

Head TA, ECE 250 Computer Architecture 2018

- Managed undergraduate TAs

Undergraduate Lab Mentor, Smith Group 2014-2019

**AWARDS AND HONORS**

UTK Douglas V. Roseberry Award 2009  
for outstanding physics/astronomy upperclassman