

John H. Ring IV

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Professional Experience

- **Research and Development, LLC** **Burlington, VT**
August 2016–Present
 - *Co-founder*
 - Run company specializing in analyzing large scale system-level problems.
 - Specialize in big data, computer security, and software engineering
- **Lord Sensing** **Williston, VT**
June 2013–Present
 - *Student Associate, Software Engineering*
 - Sole developer responsible for maintaining and extending the firmware of Lord Sensing's WSDA (wireless sensor data acquisition) product line. WSDAs collect data from wireless nodes and securely transmit the data to Lord Sensing's SensorCloud platform.
 - Implement custom features at clients request including CAN capabilities, event triggers, and UDP support
 - Maintain strict ITAR compliance
 - Designed and implemented a WSDA hosted browser based configuration utility

Education

- **University of Vermont** **Burlington, VT**
2016–2018 (expected)
 - *M.S. Computer Science*
 - Supported by graduate teaching assistanceship, including full scholarship and living stipend
 - Currently teaching Introduction to Web Development and managing 18 undergraduate teaching assistants
 - Member of Vermont Complex Systems Center and Computational Story Lab research groups
- **University of Vermont** **Burlington, VT**
2012–2015
 - *B.S. Computer Science, Minor Pure Mathematics*
 - Undergraduate teaching assistant for Introduction to Computer Programming

Relevant Coursework

Artificial Intelligence 📖 Calculus 📖 Computer Architecture 📖 Complex Networks 📖 Complex Systems 📖 Computability & Complexity 📖 Data Science 📖
Data Structures & Algorithms 📖 Discrete Structures 📖 Embedded Applications 📖 Object Oriented Programming 📖 Operating Systems 📖 Programming Languages

Notable Projects

- **Current Research:** *'Various projects in the Computer Science and Complex Systems departments'*

I am working on several projects analyzing real world complex systems and on a separate project involving programming language based security for industry applications.
- **Undergraduate Honors Thesis:** *'Retrofitting Programs for Security Auditing'*

Developed a tool in OCaml that accepts source code in LLVM IR AST representation and a formally defined auditing protocol. The tool then retrofits the program with the specified auditing protocol. This process is formally verifiable and language independent.

Technical Skills

- **Programming Languages:** Proficient in: C++, Python, Matlab, \LaTeX
Also basic ability with: Java, Javascript, HTML, CSS
- **Operating Systems:** Linux Kernel, GNU, Windows, Android
- **Development Tools:** SVN, Git, Yocto, GCC/GDB, CLANG/LLVM, Doxygen, KVM, VIM

Leadership and extra-curricular activity

- UVM Computer Science Crew member and tutor since 2012.
- UVM Sailing Team (Nationally Ranked) officer during undergrad.