Ryan Lehmkuhl

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Education

University of California, Berkeley ***Class of 2021***

- B.S. Electrical Engineering and Computer Science, Applied Mathematics Minor
- Regents' & Chancellor's Scholar (top 1.5% of Berkeley's admitted class)

Relevant Courses: Multivariable Calculus, Linear Algebra and Differential Equations, Structure and Implementation of Computer Programs

Work Experience

Circadence Corp. - *Software Developer Intern* ***Summer 2017***

- Reverse-engineered a proprietary platform's framework and automated many of its tasks using Python
- Performed backend development on a penetration testing engine currently funded by military contract
- Configured a Logstash parser, ElasticSearch indices, and Kibana filters for network monitoring
- Practiced Agile development through daily stand-ups, task tracking with Taiga, and bi-weekly retrospectives

SPAWAR - *Security Research Intern* ***Summer 2016***

- Reverse-engineered a proprietary Industrial Control Systems protocol using Wireshark
- Wrote a TCP-hijack attack in Python that enabled complete takeover of devices on a SCADA network
- My work helped earn my lab $200,000 in funding for future security research

SPAWAR - *Software Developer Intern* ***Summer 2015***

- Front-end Android development in Java for an app focused on SCADA network vulnerability analysis
- Gained experience employing Git for version control and operating as part of a development team

Mathnasium - *Mathematics Tutor* ***Spring 2016-2017***

- Tutored elementary to college-aged students in math ranging from basic arithmetic to multivariable calculus

Projects

News Feed Generator ***Present***

- Python program for automatically clustering news articles from different sources
- Achieves clustering through basic Natural Language Processing and Machine Learning techniques

Scheme Interpreter ***Fall 2017***

- Interpreter written in Python with all core functionality of Scheme including tail-recursion and macros

SCADA Network TCP Session Hijacker ***Summer 2016***

- Python program that demonstrates a severe vulnerability in modern SCADA networks
- Automatically configures localhost kernel rules to enable MAC-spoofing and port forwarding
- Concurrently executes ARP cache poisoning, TCP session hijacking, and packet sniffing/injection
- Spoofs conversations between supervisory server and devices in MODBUS and Fox

Skills (work experience level in parenthesis)

- Languages/Frameworks: Python (4/5), Java (2/5), MySQL (2/5), ELK (3/5), Json (2/5)
- Programs: Wireshark (4/5), Ettercap (3/5)
- Other: Linux (4/5), TCP/IP (3/5), Android Development (2/5), Git (3/5)