

Jonathan O'Brien

(860)316-7803 jvo7822@rit.edu East Hampton, CT jonobrien.io

Objective

Seeking a role as a CNO Developer to gain experience with Exploit Development and Vulnerability Research.

Employment

Mantech, Tyson's Corner, VA – Linux Developer

- Researched Linux Boot Process and SysV Init
 - Created proof-of-concept Python scripts to assist team with mission-critical software
- Researched the ELF file format and the process of dynamic linking/loading of Shared Objects
 - Evaluated tools and developed proof-of-concept Python scripts with IDA Pro and Radare2

Mantech, Tyson's Corner, VA – Windows Kernel Developer

- Developed universal Windows Kernel Driver to perform various heuristic functions
 - Heuristic functions based on memory criteria
 - Allow team to better debug critical issues on Windows XP to 10
 - Assist with mission-critical software packages
- Analyzed public vulnerabilities in modern browsers, Chrome and Firefox
 - Utilized existing triage and analysis tools including procmon, procdump, process explorer
 - Created custom tools to augment triage and analysis techniques
 - Performed Source code auditing of open source browsers
 - Analyzed various crash behavior with variety of attacks using procdump

PFP Cybersecurity (Power FingerPrinting), Vienna, VA – Software Engineering Intern

- Created user-mode backdoor in OpenWrt router firmware
- Explored use of MinnowBoard MAX as possible hardware deployment platform for product
- Managed team of interns to develop web application utilizing the Play! Framework in Scala with Hadoop/Hbase to:
 - Allow continuous communication and configuration of hardware over network with high throughput
 - Create D3.js charts of aggregated data from connected devices via websockets communicating with hardware
 - Deploy nightly to AWS for testing and various use cases
- Automated product build process for Windows 10, Debian Linux, OSX Sierra
 - Python scripts instrumented QtCreator *make* and *build* steps with Visual Studio build environment
 - Python scripts controlled matlab executable creation

Rochester Institute of Technology – Teaching Assistant

SE Freshman Seminar – taught software development lifecycle, software methodologies, and good software practices

Johns Hopkins University – Teaching Assistant – Center For Talented Youth

Introduction to Robotics Course – taught RobotC, Lego NXTG, instructed on a variety of programming challenges

Education

Rochester Institute of Technology, Rochester, NY

Major: Software Engineering *Minor:* Electrical Engineering *GPA:* 3.3/4.0 *Graduating:* May 2018

Skills

Languages: Python, C, Ruby, Javascript

Web Frameworks: Django, Play!, Rails

Tools: IDA Pro, Windbg, PyCharm, Eclipse

Version Control: Git, SVN

Jira, Confluence, AWS

clearance: secret

Familiar with Windows Kernel, ELF Format

Projects

Developer – Python Slack API bot – “GoToBot”

- Wrote Slack bot to assist with team communication at PFP Cybersecurity
- Interfaced with Slack's Web Real-Time-Messaging API
- Handled stress testing from 10 concurrent users

Professional Memberships

- Eagle Scout - Boy Scouts of America
- Society of Software Engineers

Personal

- Participated in CTF challenges, and solving various related problems (exploit-exercises) and LabyREnth 2017
- Electrical Team Lead – FIRST Robotics - designed control systems and integrated with LabView
- Eagle Project – Managed project with 22 people to repair Rails-to-Trails path; required state approval
- Hiking, Reading, Camping, Snowboarding