EDWARD L. SULLIVAN

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EDUCATION

University of California, San Diego December 2015
M.S. in Computer Science *La Jolla, CA*

GPA: 3.78/4.0
Research Assistant in Computer Security with advisers Stefan Savage and Kirill Levchenko
Teaching Assistant for undergraduate course in Computer Security
Master's thesis topic: "Static Decompilation of Unobfuscated Native Code"

Clemson University June 2013
B.S. in Computer Engineering *Clemson, SC*

GPA: 4.0/4.0
Calhoun Honors College
National Scholars Program: Full academic scholarship at Clemson University

WORK EXPERIENCE

Passionate Software Developer July, 2017 - present
Vincit *Irvine, CA*

- Contributed to the backend, APIs, and management dashboard for the client Superoperator
- Planned and developed full-stack projects using Node.js, AngularJs, PostgreSQL, Selenium, Mocha.js, Knex.js, Objection.js, JavaScript, Typescript, and AWS Elastic Beanstalk

Security Analytics at a Computer Security Startup March, 2016 - April, 2017
Lexumo *Cambridge, MA*

- Developed and tested automated and semi-automated tools to infer the git commits responsible for introducing and patching publicly-disclosed security vulnerabilities (CVEs, etc.) in more than 600 open-source libraries written in C, C++, Java, Python, and other languages
- Wrote python code to analyze noisy information from several sources, including vendor websites, mailing lists, jira bug tickets, LLVM IR, and git repos, in order to augment the often incomplete information published by the National Vulnerability Database about bug patches and affected software versions

Internship in Intelligent Transportation Systems Summer 2013
Noblis *Falls Church, VA*

- Developed software tools for the automated collection and prioritization of publications from online sources related to the costs and benefits of deployed Intelligent Transportation Systems
- Designed and created new website templates for the U.S. Department of Transportation to use for the interactive presentation of data in the DOTs 2013 biannual report on ITS

Internship Deploying a Sensor Network in the Sustainability Base Summer 2012
NASA Ames *Moffett Field, CA*

- Programmed and deployed a network of wireless TelosB motes to measure temperature, light, and humidity so as to aid in the development of integrated control systems for the Sustainability Base, a state-of-the-art LEED Platinum building that serves as a testbed for NASA-designed green technologies

Internship in VLSI Design Automation Summer 2011
University of California, Santa Cruz *Santa Cruz, CA*

- Developed an algorithm to selectively widen or narrow wires and insert cross-links in chips local resonant clock trees in order to improve tree power efficiency by more than 40%
- Implemented the algorithm in C++ and Python as part of Dr. Matthew Guthaus's under-development open-source simulation software for chips clock trees (ClockSyn)
- Used HSpice to verify the effects of my algorithm on slew, skew, and power for several clock trees
- Presented my results in an informal academic paper, which later won the first place monetary prize in the Piedmont IEEE Student Paper Competition

RESEARCH PROJECTS

Reverse Engineering and Security Audit of Commercial Avionics Fall 2013 - Fall 2015
Research with the Aerosec team at U.C., San Diego *La Jolla, CA*

- Mapped out underlying SDL structures of executable files using IDA Pro and IDAPython
- Performed hardware reverse engineering techniques to extract and decrypt firmware from consumer-grade ADS-B receivers used in aviation
- Coauthored paper accepted at the ACM Conference on Computer and Communications Security (CCS) 2014: "On The Security of Mobile Cockpit Information Systems"

An Internet-wide Measurement and Security Analysis of IPsec Spring 2015
3-student project for a course in Computer Networking at U.C., San Diego *La Jolla, CA*

- Applied existing tools ZMap and IKE-scan to scan all IPsec end hosts in the IPv4 address space that use the Internet Key Exchange protocol
- Analyzed the distribution of security configurations chosen by end hosts in the wild and paid special attention to certifications used in authentication and IKE vendor identification fields

AWARDS

Riggs Most Outstanding Senior Award for Computer Engineering *Spring 2013*

Captain of Clemson Security Team (awarded Best in Defense) *Spring 2013*
South East Collegiate Cyber Defense Competition

Member of 1st Place Team in the Palmetto Cyber Defense Competition *Spring 2013*

Jerome V. Reel Award of Academic Excellence *Spring 2013*
Presented by the Omicron Delta Kappa Honor Society

1st Place in the Piedmont IEEE Student Paper Competition *Spring 2012*

Riggs Most Outstanding Sophomore Award for Computer Engineering *Spring 2011*

Treasurer of Tau Beta Pi engineering honor society *2010-2011*

1st Place in the Alpha Lambda Delta Book-Scholarship Essay-Contest *Fall 2010*

Full-scholarships for international travel from various sponsors *2010 - 2012*
South Korea, France, England, South Africa, Canada

SKILLS AND COURSES

Programming: C/C++, Python, Typescript, JavaScript ES6
Reverse engineering: IDA Pro, IDA Python
Web: Angular 2, Node.js, Selenium WebDriver, HTML, CSS, AJAX, Javascript, Objection.js, Mocha.js
Databases: PostgreSQL, MySQL

Tools: GNU/Linux, Semaphore CI, Jenkins CI, git, svn, bash/shell, jira, phabricator, trello, pycharm, vim, sublime, ssh/sftp/scp, screen, git python, graphviz, sed, awk, grep, find, Microsoft Office, LaTeX, and many others

Previously used tools: PHP, VHDL, Matlab, Simulink, Wireshark, Protege, OWL, CLIPS COOL, flex, bison, Prolog, OCaml, OpenGL, GLSL, Perl, OpenOCD with JTAG

Courses: Software Engineering, Algorithms, Computer Security, Modern Cryptography, International Cyber Security Policy, Computer Graphics, Operating Systems, Architecture, Computer Networking, Embedded Computing, Compiler Design