EDWARD LOUIS SULLIVAN

(240) · 383 · 0498 ◇ Edward.Louis.Sullivan@gmail.com
5429 Honors Drive, San Diego, CA 92122
Home page: cseweb.ucsd.edu/~elsulliv

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

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

RESEARCH PROJECTS

Reverse Engineering and Security Audit of Commercial Avionics Fall 2013 - Present
Ongoing 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

WORK EXPERIENCE

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

Computer Engineer and DJ at a Student-Run Radio Station 2011-2013
WSBF-FM 88.1 *Clemson, SC*

- Managed the radio station's website, databases, user accounts, music automation software, show archives, and streaming servers; prepared backup and testbed web servers
- Served on a 7-member leadership board for the station and helped conduct meetings of 70+ DJs, plan concerts and social events for the DJs, and make decisions about station policies
- Hosted a weekly 2-hour show called The Ed Sullivan Show geared toward introducing listeners to new artists who had not yet reached the American Top 40

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

Programming: C/C++, Python
Reverse engineering: IDA Pro, IDA Python
Web: HTML, CSS, AJAX, Javascript, MySQL, PHP

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

RELEVANT COURSEWORK

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