

Wilson Nguyen

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EDUCATION

- Stanford University**, Stanford, California, USA Fall 2016 – Present
- **Computer Science Ph.D (Cryptography)** Fall 2020
 - **Advisor:** Dan Boneh
 - **CS:** Algebraic Error Correcting Codes (250), Mining Massive Data Sets (246)
 - **Computer Science B.S.** Fall 2016 – Spring 2020
 - **CS:** Advanced Topics in Cryptography (355), Topics in Computer & Network Security (356), Topics in Programming Language Theory (358), Cryptography (255), Computational Complexity (254), Programming Languages (242), Computer & Network Security (155), Automata and Complexity Theory (154), Operating Systems (140), Design & Analysis of Algorithms (161)
 - **Math:** Elementary Theory of Numbers (152), Modern Mathematics Discrete Methods (61DM & 62DM), Linear Algebra & Matrix Theory (113)

RESEARCH EXPERIENCE

- Undergraduate Research Assistant** – Stanford University
- **Advisor:** Zakir Durumeric Winter 2018 – Autumn 2020
 - Investigated the state of the TLS ecosystem through internet scanning and massive data set exploration.
 - Developed an SSL/TLS scanning tool (approx. 3 million domains) to probe for version, protocol, ciphersuite, elliptic curve, compression, and extension support.
 - Contributed to existing research libraries and applications such as zcrypto & zgrab2.
 - Built & maintained networking scanning infrastructure and lab environment.
 - Undergraduate Research Internship in CS (CURIS), presented in poster session Summer 2019
 - **Advisor:** Marco Patrignani Autumn 2019
 - Applied secure compilation techniques to cryptographic domains.
 - Investigated a compiler from the Oxide programming language to Ethereum bytecode to preserve relevant security properties such as linear typing and timing guarantees.

TEACHING

- Hack Lab (IPS/INTPOL 268)** – Stanford University
- **Professor:** Alex Stamos
 - **Head Teaching Assistant** Spring 2018 – Autumn 2019
 - Organized & led course staff.
 - Taught students through labs, sections, and examinations.
 - Developed hands-on labs to teach the foundational attacks in cybercrime and cyberwarfare.
 - Designed & constructed isolated practice environments for red teaming exercises and exploitation.

LEADERSHIP

- Applied Cybersecurity Organization** – Stanford University 2016 – 2019
- **Co-captain:** National Collegiate Penetration Testing Competition (Awards below) 2017 – 2018
 - **Team member:** National Collegiate Cyber Defense Competition (Awards below) 2016 – 2017
 - **Technical Advisor:** 2016 – 2019
 - Created lab environments for competition practice and research.
 - Served as organization mentor for security projects, competitions, and research opportunities.
 - **Organizer:** Ran security competitions (Capture-The-Flags) for hackathons. 2016 – 2018

INDUSTRY

- Google Security Engineer Intern** – Sunnyvale, California Summer 2018
- Conducted vulnerability research on Firebase.
 - Developed signals to detect dangerous Firebase configurations.
 - Performed product security reviews and worked with teams to remediate vulnerabilities.
 - Conducted an internal security engagement modeling insider threat.
- Praetorian Security Intern** – Austin, Texas Summer 2017
- Conducted penetration testing on client companies' commercial and staging environments.
 - Compromised publicly exposed client infrastructure including web servers and application hosts.
 - Created phishing engagements through Gophish Framework, open source intelligence, and Cobalt Strike.
 - Spread laterally through Active Directory domains and obtained system level control of domain controllers.

PROJECTS	<p>SGXware - Malware in Intel SGX – Stanford, California Autumn 2018</p> <ul style="list-style-type: none"> ● Demonstrated the effective use of Intel SGX for malware with a Pay-Per-Enclave (PPE) market ecosystem. ● Provided confidentiality & integrity guarantees for malware code and data, during execution and statically on disk. ● Designed a small syscall forwarding library and secure Domain Generation Algorithm (DGA). <p>TreeCTF – Stanford, California Spring 2018</p> <ul style="list-style-type: none"> ● Developed & operated a computer security competition held at Stanford in partnership with TreeHacks, a hackathon with competing university students across the nation. <p>LASACTF – lasactf.com – github.com/LASACTF Autumn 2015 – Spring 2016</p> <ul style="list-style-type: none"> ● Developed & operated an online computer security competition for 5000+ high school and college students
ACCOLADES	<p>Academic Awards</p> <ul style="list-style-type: none"> ● Tau Beta Pi Candidate – Stanford University 2018 – 2019 <ul style="list-style-type: none"> ■ Top 1/5 of engineering seniors and the top 1/8 of engineering juniors. ■ Invited for both senior and junior year. <p>Cyber Security Competitions</p> <ul style="list-style-type: none"> ● National Collegiate Penetration Testing Competition – Co-Captain 2017 – 2018 <ul style="list-style-type: none"> ■ Nationals: 1st place Nov 2017 ■ Western Region: 1st place Oct 2017 ■ Conducted a full penetration test on competition infrastructure, navigated client & company interaction, authored follow-up remediation report. ● National Collegiate Cyber Defense Competition – Competitor 2016 – 2017 <ul style="list-style-type: none"> ■ Western Region: 2nd place Mar 2017 ■ Western Region Invitational: 1st place Nov 2016 ■ Defended Active Directory environments and domain controllers from live attacks by professional penetration testers.
LANGUAGES AND TOOLS	<p>(Large Scale) C, Python, Go (Medium) Java, C++ (Small) Javascript, Haskell, OCaml, Rust, Assembly</p> <p>Tools: Zmap Project, Big Query, Compute Engine, Docker, Git, Intel SGX, Burp, Kubernetes, Chrome APIs & Extensions, Active Directory, Metasploit, Powershell Empire, Nessus, Gophish, BloodHound, CTFd, Bash, Vim, Tmux</p>