

EDUCATION

- **University of Florida** Gainesville, FL
Doctor of Philosophy; Emphasis: Cybersecurity; Advisor: Patrick Traynor Projected: 2021
- **Florida International University** Miami, FL
Bachelor of Science, cum laude, Computer Engineering Fall 2015

RELEVANT GRADUATE COURSES

- Introduction to Data Science, Computer Networks Security, Introduction to Cryptography, Computer Information Security, Mobile Security, Engineering Entrepreneurship

SKILLS

- **Programming Languages:** Proficient: (Python, Java); Familiar: (MATLAB, C, JavaScript, SQL)
- **Technologies:** Software: (L^AT_EX, Git, MongoDB, Spark, Audacity, Hadoop, various NLP packages); OS: (OS X, Ubuntu, Windows)
- **Languages:** Spanish (native), English (fluent)

EXPERIENCE

- **Ph.D. Student – Research Assistant** Gainesville, FL
University of Florida June 2016 – Present
 - Researched the SMS usage of many online services based on 900,000 messages sent to public gateways. We uncovered phone verification fraud, poor entropy generation of one-time codes and sensitive information being sent over an insecure medium
 - Designed a system that can detect caller ID spoofing before a person picks up the phone using strong cryptographic authentication
 - Proposed and implemented a systems that uses time, instead of a secret, as the encryption mechanism (i.e., fast encryption/slow decryption) to protect long term data at rest
 - Developed a data pipeline (all aspects of E.T.L. and data warehousing) and analyzed traffic from a real hospital network to detect and classify potentially compromised devices
- **Data Science - Threat Intelligence Intern** Reston, VA
FireEye Summer 2019
 - Developed python-based analysis tools to extract and visualize key insights from a large corpora of unstructured data to improve intelligence reports
 - Created web crawlers with a database integration to record historical events and streamline the threat intelligence analysis process
 - Communicated (presentations/reports) results from the analysis tools to audiences with multiple non-technical backgrounds
- **Flight Controls R&D Intern** Mountain View, CA
NASA Ames Research Center Fall 2014 and Summer 2015
 - Researched possible function allocations in aircraft separation assurance to support future growth for air traffic controllers
 - Created MATLAB automated scripts to compare and streamline the metric analysis process of multiple simulations with various parameters
 - Created JavaScripts to dynamically view simulation data gathered in order to find bottleneck points and macro patterns in the airspace traffic
 - Gave multiple technical presentation to a room full of researchers to convey ideas and progress
- **Management Assistant and IT Support Technician** Miami, FL
PAL Supports & Services Corp June 2013 – August 2016
 - Quoted and purchased aircraft parts as part of the procurement process

- Managed a secure wireless network and made software/hardware upgrades to the computers in the office
- Performed troubleshoot and solved technical problems ranging from printer issues to back up of data and installment of new operating systems

● Manufacturing Engineering Systems Intern

Dearborn, MI

Ford Motor Company

Summer 2014

- Processed and refined Big Data from the Connected Vehicle Analytic Challenge using High Performance Computing and SQL scripting
- Trained Natural Language Processing models to support more accurate business output from Securities and Exchange Commission files
- Installed a distributive computing network that allowed faster processing of manufacturing Big Data that improved processing to 60% of the original time

PROJECTS

- **Hospital Network Traffic Analysis:** Created the data analysis pipeline for network traffic collected from a hospital. This included all parts of the ETL process: making crawlers to various OSNIT website, cleaning/filtering data, storing data in a data warehouse model. The Big Data was then analyzed using Spark and Python to provide a security analysis of the devices inside the hospital.
- **Time-based Encryption:** Proposed and implemented a systems that uses time, instead of a secret, as the encryption mechanism (i.e., fast encryption/slow decryption) to protect long term data at rest.
- **Stopping Caller ID Fraud:** Designed an application that can detect caller ID spoofing before a person picks up the phone.
- **Improving Voice Assistants:** Designed a filter mechanism that prevents attackers from injection commands to Voice Assistants (e.g., TV activating a Google Home/Alexa)

PUBLICATIONS

- [1] **Luis Vargas**, Logan Blue, Vanessa Frost, Christopher Patton, Nolen Scaife, Kevin R.B. Bulter, and Patrick Traynor. Digital Healthcare-Associated Infection: A Case Study on the Security of a Major Multi-Campus Hospital System. In *Proceedings of the 2019 Network and Distributed System Security Symposium*, NDSS '19, 2019.
- [2] Bradley Reaves, **Luis Vargas**, Nolen Scaife, Dave Tian, Logan Blue, Patrick Traynor, and Kevin R.B. Butler. Characterizing the Security of the SMS Ecosystem with Public Gateways. *ACM Transactions on Privacy and Security*, 2018.
- [3] Logan Blue, Hadi Abdullah, **Luis Vargas**, and Patrick Traynor. 2MA: Verifying Voice Commands via Two Microphone Authentication. In *Proceedings of the 13th ACM Symposium on Information, Computer and Communications Security*, ASIACCS '18, 2018.
- [4] Logan Blue, **Luis Vargas**, and Patrick Traynor. Hello, Is It Me You're Looking For? Differentiating Between Human and Electronic Speakers for Voice Interface Security. In *In Proceedings of the 11th ACM Conference on Security and Privacy in Wireless and Mobile Networks*, 2018.
- [5] **Luis Vargas**, Gyan Hazarika, Rachel Culpepper, Kevin R.B. Bulter, Thomas Shrimpton, Doug Szajda, and Patrick Traynor. Mitigating Risk while Complying with Data Retention Laws. In *Proceedings of the 2018 ACM SIGSAC Conference on Computer and Communications Security*, CCS '18, 2018.
- [6] Bradley Reaves, Logan Blue, Hadi Abdullah, **Luis Vargas**, Patrick Traynor, and Tom Shrimpton. AuthentiCall: Efficient Identity and Content Authentication for Phone Calls. In *Proceedings of the 26th USENIX Security Symposium*, 2017.
- [7] Alexander Pons, Andrew De La Rosa, Silvia Vidaurre, **Luis Vargas**, and Eugene Pons. Security and Privacy Implications of 'Do Not Track'. *International Journal of Information Privacy, Security and Integrity*, 3(2):117-133, 2017.

PUBLIC TALKS

- **Mitigating Risks while Complying with Data Retention Laws:** 2018 ACM SIGSAC Conference on Computer and Communications Security (CCS'18), October 2018
- **Digital Healthcare-Associated Infection: A Case Study on the Security of a Major Multi-Campus Hospital System:** 2019 Network and Distributed System Security Symposium (NDSS'19), February 2019