

Vinicius Bobato

(817) 542-8538 • ymbobato@tamu.edu

Website: <https://ymbobato.github.io> Linked-In: <https://www.linkedin.com/in/ymbobato/>

EDUCATION

Texas A&M University

Ph. D Computer Engineering

Texas A&M University

M.S. Engineering Technology

Thesis: Cyber Security Use Cases on a Smart Distribution System

Texas A&M University

B.S. Electronic Systems Engineering Technology with Cybersecurity Minor

College Station, Texas

GPA: 3.7

College Station, Texas

GPA: 3.7

College Station, Texas

GPA: 3.6

SKILLS

Programming & Scripting:

Python • C/C++ • Shell/Bash • AI/ML • TensorFlow • NumPy & Pandas • OOP

Networking:

Cybersecurity • Protocols and Standards • UNIX • TCP/IP • Virtualization • Data Analysis • Packet Analysis (Wireshark) • IT/OT

Hardware:

Embedded Systems • Embedded Linux • Analog and Digital Circuit Analysis

Soft Skills:

Portuguese, English, and Spanish • Critical Thinking • Problem-Solving

EXPERIENCE

Department of Electrical and Computer Engineering – PRISE Project

Graduate Research, Aug. 2023 – Present

- Modeled the network side of a Smart Distribution System and AMI RF mesh network using Linux containers.
- Created Python scripts to allow communication between containers using TCP and UDP sockets.
- Performed different cyber-attacks to analyze their impact on a Smart Distribution Grid using ARP spoofing and packet generation open-source tools.
- Worked on the analysis of cyber-physical data in malicious settings using Python data-analysis tools.

Texas A&M Engineering Experiment Station – Cyber Physical Resilient Energy Systems Project

Undergraduate/Graduate Research Assistant, May 2022 – Dec. 2023

- Used Linux in virtualized environments and scripting languages to implement connectivity between DNP3 and IEC60870 protocols.
- Developed various programs in C/C++ and Python to integrate different technologies for research.
- Performed data-analysis techniques using NumPy and Pandas to find anomalies in malicious data from cyber-attacks.
- Applied and studied offensive and defensive techniques to safeguard digital assets.

Department of Engineering Technology & Industrial Distribution

Graduate Teacher Assistant for Local-and-Metropolitan-Area Networks, Jan 2024 – Present

- Led hands-on lab sessions to guide students in gaining proficiency with terminal commands on various operating systems, facilitating practical experience in networking configuration and troubleshooting.
- Designed and implemented varied networks using Cisco equipment for laboratory sessions.
- Assisted students to understand and implement different communication protocols and standards on routers and switches (OSPF, BGP, RIP, DHCP, VLANs, Trunking, STP).

OUTSTANDING PROJECTS

- **Engineering Tech Capstone:** As a Project Manager, I led the development of a table sized Remote Terminal Unit (RTU) using different electronics and DNP3 communication protocol for SCADA security research at Texas A&M University.
- **CAPTCHA Image Classification:** Developed a deep learning model using the pre-trained VGG16 Machine Learning architecture and TensorFlow to accurately classify CAPTCHA images into different categories, achieving 93% accuracy. Applied data augmentation techniques to increase robustness of the model and evaluated its performance using metrics like precision, recall, and F1 scores. Created a confusion matrix using heatmaps to better visualize the results.
- **ShellBridge:** Developed a reverse shell application, enabling remote server interaction. Facilitated secure file transfers with download and upload functionalities using SSL/TLS, demonstrating skills in networking and cybersecurity.

PUBLICATIONS

- Cyber Security of a Smart Power Distribution System – Cyber Subsystem Use Case - 2025 Grid Edge Technologies Conference & Exposition
- Cyber Security Use Case on a Smart Power Distribution System – Physical Subsystem - 2025 Grid Edge Technologies Conference & Exposition
- Analyzing a Multi-Stage Cyber Threat and Its Impact on the Power System - IET Cyber-Physical Systems: Theory & Applications

COURSEWORK

Artificial Intelligence • Embedded Systems Intelligent Design • Data Analysis and Tools for Industry • Advanced Network & Security Systems