Vinicius M. Bobato

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EDUCATION

Texas A&M University — **College Station, Texas**
Ph. D Computer Engineering — *Exp Grad December 2028 | GPA: 3.5*

Texas A&M University — **College Station, Texas**
M.S. Engineering Technology — *Grad December 2024 | GPA: 3.5*

Texas A&M University — **College Station, Texas**
B.S. Electronic Systems Engineering Technology with Cybersecurity Minor — *Grad May 2023 | GPA: 3.6*

Relevant Coursework:

Deep Learning, Artificial Intelligence, Deep Reinforcement Learning, Intelligent Agents, Data Analysis & Tools for Industry, Advanced Network & Security Systems, Embedded Systems Intelligent Design

TECHNICAL SKILLS

Programming:	Python, C/C++, Bash, SQL (Beginner)
Frameworks:	NumPy, Pandas, Matplotlib, Scikit-learn, PyTorch, Keras, TensorFlow, Flask
Networking & Security:	TCP/IP, OSPF, VLANs, DHCP, DNS, Firewall configuration, Packet Analysis
Tools & Platforms:	Linux (Ubuntu, Kali), Windows, Git, Nmap, Metasploit, Jupyter, Anaconda, Scapy
Languages:	Portuguese (Native), English (Fluent), and Spanish (Advanced)

EXPERIENCE

Department of Electrical and Computer Engineering – PRISE Project
Graduate Researcher, Aug. 2023 – Present

- Developed a 95% accurate deep learning model in PyTorch to detect malicious TCP traffic in an OT network.
- Led the development of logistic regression models that identify MITM traffic with over 99% accuracy.
- Analyzed and visualized 100K+ network packets using Python, Pandas and Matplotlib, identifying trends in malicious activity.

Texas A&M Engineering Experiment Station – Cyber Physical Resilient Energy Systems Project
Undergraduate/Graduate Research Assistant, May 2022 – Dec. 2023

- Engineered secure communication between DNP3 and ICCP protocols in virtualized Linux environments, enhancing system efficiency by 20%.
- Developed various programs in C/C++ and Python to integrate different technologies for research, improving system reliability and decreasing processing time by 50%.
- Performed data-analysis using NumPy and Pandas to find anomalies in network traffic data for three different attack vectors.

Department of Engineering Technology & Industrial Distribution
Graduate Teacher Assistant for Local-and-Metropolitan-Area Networks, Jan 2024 – Present

- Led networking lab sessions for 150+ students, focusing on terminal commands and troubleshooting techniques, resulting in 95% of students achieving hands-on proficiency by the end of the term.
- Designed and implemented network topologies, assisting students with practical skills in network protocol implementations in Cisco networking equipment.

OUTSTANDING PROJECTS

- **ASIC (AI for Satellite Image Classification) – (https://vmbobato.github.io/asic-blog/):**
  - Fine-tuned an image segmentation model to classify urban, forest, agriculture, and water regions from satellite images.
  - Deployed the model on a WebApp via Flask REST API to enable user-driven image analysis.
  - The model achieved over 70%-pixel accuracy on real-world data.
- **Machine Learning Based Firewall:**
  - Built a real-time intrusion detection system using a Random Forest classifier for network anomaly detection.
  - Achieved a ROC AUC score of 0.9997 on balanced network traffic dataset.
  - Built a Flask RESTful API to deliver live predictions.

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

CERTIFICATIONS

Machine Learning with Python – May 2025
Deep Learning with Keras and TensorFlow – May 2025
Deep Learning with PyTorch – May 2025