Vinicius M. Bobato

(817) 542-8538 | vmbobato@tamu.edu
Portfolio: vmbobato.github.io | LinkedIn: linkedin.com/in/vmbobato/

EDUCATION

Texas A&M University — **College Station, Texas**
Ph. D Computer Engineering — *Exp Grad December 2028 | GPA: 3.75*

Texas A&M University — **College Station, Texas**
M.S. Engineering Technology — *Grad December 2024 | GPA: 3.75*

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

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, AWS, Jupyter, Anaconda, Docker, Scapy
Languages:	Portuguese (Native), English (Fluent), and Spanish (Advanced)

EXPERIENCE

Avika Billing Solutions, LLC
Independent Software Consultant, Aug. 2025 – Present

- Designed and deployed a full-stack medical billing platform, integrating Flask, AWS Elastic Beanstalk, RDS, and SES to deliver a secure, scalable SaaS product.
- Implemented secure payment workflows with credit card and ACH support, automated NACHA file exports, and webhook handling for real-time transaction monitoring.
- Built and maintained infrastructure & DevOps pipeline, including SSL/TLS configuration, domain management, CI/CD deployments, and database migrations to ensure production-ready reliability.

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

- Built a PyTorch deep learning model detecting malicious TCP traffic with 95% accuracy.
- Developed logistic regression models achieving 99% accuracy on MITM traffic.
- Analyzed and visualized 100K+ network packets using Python, Pandas and Matplotlib, identifying trends in malicious activity.
- Deployed ML pipelines into Flask REST APIs for real-time predictions.

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

- Engineered secure DNP3 and ICCP communication in Linux, improving efficiency by 20%.
- Developed C/C++ and Python to integrate different technologies for research, improving system reliability and decreasing processing time by 50%.
- Performed anomaly detection on network traffic across three attack vectors using NumPy, Pandas, and Matplotlib.

OUTSTANDING PROJECTS

- **ASIC (AI for Satellite Image Classification) – (https://vmbobato.github.io/asic-blog/):**
  - Fine-tuned image segmentation models 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
- 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 PyTorch – May 2025
Deep Learning with Keras and TensorFlow – May 2025
AWS Cloud Practitioner – *In Progress*