

Christofer Piedra

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OVERVIEW

Driven software engineer skilled in designing secure full-stack applications & building predictive data models. Proficient with Git version control, clean-coding standards, & agile collaboration to rapidly adopt new technologies. With a Business Management background, consistently striving for cost-efficient development with reusable automation software.

EDUCATION

Bachelor of Science, Computer Science, Florida Atlantic University *December 2025*
Minor: Artificial Intelligence

Bachelor of Business Administration, Management, Florida Atlantic University *December 2025*

SKILLS

Languages: Python, JavaScript (ES6+), C++, C, HTML5, CSS3, SQL, Java

Frameworks & Tools: Git, React, Node.js, Pandas, NumPy, Seaborn, Matplotlib, TensorFlow, Scikit-learn, Linux/Unix, Intrusion Detection Systems (Zeek), AWS (SageMaker, ECS), Firebase

EXPERIENCE

Graduate Teaching Assistant – Master’s Level Internet of Things Course

College of Engineering & Computer Science, FAU *August 2024 – May 2025 (9 months)*

- Created 3 multi-week projects teaching traffic analysis with Python, Wireshark, Zeek, & Scikit-Learn
- Instructed 300+ students across 2 semesters about secure Linux pipelines via lectures and 1-on-1 support

Undergraduate Research Fellow

Tecore Research Lab, FAU *May 2024 – July 2024*

- Built a full-stack project monitoring traffic & threats with Zeek, Docker, & InfluxDB; handled 1M+ packets in tests
- Coordinated daily lab operation & expanded use of private \$500,000+ 4G LTE network for experiments & data

Senior Engineering Lab Assistant

College of Engineering & Computer Science, FAU *January 2023 – July 2024*

- Maintained 200+ embedded devices and assisted 200+ students across CS, CE, EE, & ME lab-based courses
- Automated lab inventory tracking systems across engineering departments reducing labor cost by 82%

Projects

Custom GPT-2 Build

- Implemented a 12-layer GPT with bfloat16 DDP, cosine LR decay, grad accum & KV-cache for 20x faster inference
- Tokenized 10B FineWeb tokens & ran a 20-step proof-of concept, reducing val loss from 10.99 to 7.62 (0.246 on HellaSwag MC1)

FlightPath: Professional Networking Web App

- Directed development of a full-stack LinkedIn-style app with 4 roles: students, employers, professors, university admin
- Engineered a secure, responsive, scalable UI with role-based navigation & AWS hosting across 40+ components
- Managed agile development cycles across 3 groups: developers, sponsor, & university administration

Makemore Character-Level Language Model

- Trained a 75k+ parameter neural network on 30k+ character sequences using backpropagation and gradient descent
- Reduced loss from 3.6 to 1.76, outperforming the random baseline of 2.30 for a 27-token vocabulary
- Visualized 3 training loss curves and sampled 100+ text outputs to assess model performance and tune architecture

AI Basketball Predictor

- Tuned hyperparameters via grid search & cross validation, achieving over 75% game-result accuracy
- Tuned hyperparameters via grid search and cross-validation across 500+ training iterations
- Packaged into a reusable Python module with an evaluation dashboard visualizing predictions across 12 metrics

Network Security Testbed with Detection & Dashboard

- Detected & labeled 5 attack types (ARP poisoning, DDoS, port scan, etc.) in real time using custom IDS scripts
- Implemented a secure data pipeline, processed 20k packets per run, displayed insights into an InfluxDB dashboard
- Personally secured \$4,000 in research funding for summer work through a competitive fellowship program and led 2 presentations to a DoD representative, contributing to continued funding of a \$591,000 cybersecurity grant

Wordle Entropy Solver

- Achieved 100% solve rate with an average of 3.70 guesses per word

- Reduces solution space from 2,309 to 1 in under 4 steps by pruning based on feedback patterns

Awards & Recognition

Summer Undergraduate Research Fellowship

Summer 2024 – Selected as 1 of 20 fellows (roughly 10% acceptance rate) to conduct cybersecurity research under Dr. Imadeldin Mahgoub; developed and implemented Zeek-based intrusion detection techniques for IoT networks

Research Presentation: “Security Enhancement of the FAU Tecore Lab IoT Testbed”

August 2024 – Showcased research findings to academic & DoD audiences at FAU's Research Symposium. Engaged over 50 attendees during poster session

Research Paper Under Review: “Common Cybersecurity Attack Types & Zeek-Based Detection Strategies in IoT Networks”

Submitted June 2025 – Under review at FAURJ; co-authored with Dr Imad Mahgoub; introduces Zeek-based detection algorithms for the 5 key IoT attack threats detected in “Network Security Testbed with Detection & Dashboard” project