





Kevin Lizarazu-Ampuero

 [LinkedIn](#) |  (703)447-7627 |  lizarazukevin@vt.edu |  [GitHub](#) | Arlington, VA

EDUCATION

Bachelor of Science

Virginia Tech

Blacksburg, VA 07/2019 - 05/2023

- **Major** in Computer Engineering, **Minor** in Organizational Leadership
- **Relevant Coursework:** Machine Learning, Software Systems, Computer Systems, Data Structures & Algorithms, Large Scale Software Design, Statistics, Computer Architecture, Computer Vision, Artificial Intelligence, Computer Networking

SKILLS

- **Languages:** Python, C, C++, C#, Java, MATLAB, SQL, Bash, LaTeX, HTML
- **Packages:** NumPy, SciPy, Tkinter, RayLib, Pandas, OpenCV, AIGym, SciKit-Learn, RegEx
- **Development:** Qt, Docker, Git, Tensorflow, PyTorch, Linux, Anaconda, GDB, Valgrind, Kaggle, Unity, Unreal Engine

EXPERIENCE

MITRE Workforce Development Program

Virginia Tech

Blacksburg, VA 08/2021 - 05/2023

- Led research on multi-agent reinforcement learning systems for maritime remote sensing applications using Python
- Optimized training times by reducing processing by 20% via CUDA parallel processing and enhanced reward functions
- Analyzed training data using TensorFlow, Numpy, and Gym within the Ubuntu environment tracking reward metrics
- Collaborated with cross-functional teams to utilize machine learning, artificial intelligence, and Unreal Engine to design and deliver 2D and 3D simulation testbeds showcased at the 2023 SciTech Forum

Software Engineer, Intern

MITRE

McLean, VA 05/2022 - 08/2022

- Played a pivotal role in developing a gold standard for red teaming AI systems, finding and mitigating vulnerabilities
- Directed and coordinated a team of interns, orchestrating the creation and validation of PyTorch object detectors autonomously through a combination of Python, Bash, Cloud Computing, and injection of adversarial patches in our tests
- Improved performance of detections by 18% using the MMDetection framework trained on 330k COCO images
- Drove the creation of synthetic data using Unreal Engine with JSON manipulation increasing training and test fidelity
- Successfully applied Python's Adversarial Robustness Toolbox (ART) to lower detections by 31% in the synthetic world

RockSat-X Sensors Lead

Virginia Tech

Blacksburg, VA 10/2020 - 08/2022

- Developed a robust event loop in C to manage sensor data stored in binary and facilitate I2C and SPI with STM32
- Converted functional C++ libraries into C, making it compatible with the Raspberry Pi Zero's limited resources
- Spearheaded the Tetra star tracker algorithm to determine the payload's position in space via star triangulation in O(1)

PROJECTS

Augmented Reality Transit

GDMS Senior Design Project

08/2022 - 05/2023

- Unity-based AR app that visualizes 3D paths from Google Maps API and uses YOLOv5 for hazard detection on HoloLens

Fake News Detection

Machine Learning Project

01/2023 - 05/2023

- Trained Naive Bayes [57%], Support Vector Machine [87%], and ChatGPT models on a 45k article dataset (real and fake) from Kaggle, prepared using a bag-of-words approach with a 90/10 split on Python and Pandas dataframe

DermaCheckAI

Large Scale Software Design Project

08/2022 - 01/2023

- Trained a YOLOv5 model on 12k images of benign [92% accurate] and malignant [98% accurate] samples to give diagnosis
- Applied C++ design patterns, Python for REST API calls, and SQL for customer data storage all in agile schedule

ORGANIZATIONS

Society of Hispanic Professional Engineers

SEC Representative

05/2022 - 05/2023

A. James Clark Scholars Program

Exclusive Cohort Member

06/2019 - 05/2023

Additionally: Google Latin Student Leadership Summit, ColorStack, Dean's List, VT Global Education Office, Hume UG Research