

Joaquin Tuckett

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EDUCATION

Virginia Tech Blacksburg, VA
Majors: **Computer Engineering, Electrical Engineering** (Honors College)
Minor: **Mathematics**
Expected Graduation: Spring 2028
GPA: **3.81**

WORK EXPERIENCE

Summer Research Internship May 2025 – Jul 2025
Mentorship and Academic Outreach Program, Virginia Tech Blacksburg, VA

- Conducted research on **multi-agent LLM systems** for automated detection of vulnerabilities in Solidity smart contracts
- **Evaluated 15** smart contract analysis tools based on **11 key metrics**
- Identified **3 recurring weaknesses** and proposed mitigation strategies at a symposium

Quantum Machine Learning Intern July 2023
INA Solutions Inc. Leesburg, VA

- Developed a quantum machine learning (QML) model for character recognition
- Researched 3 existing models and developed 2 prototypes alongside 2 other interns
- Analyzed tradeoffs and presented findings to senior leadership

EXTRACURRICULARS

CRO Labs Chief Engineer Oct 2024 – Dec 2025
Department of Electrical and Computer Engineering, Virginia Tech Blacksburg, VA

- Promoted to **Chief Engineer** of Virginia Tech's largest robotics design team, VT CRO
- Founded and **led** a 15-member subteam innovating on **multi-modal robotics**
- Managed recruitment, scheduling, a \$3,000 budget, experiment design, and systems engineering for an **autonomous robotics system** that **integrates** driving, flying, and swimming capabilities

BE Digital Labs Research Volunteer Sept 2024 – Jan 2025
Myers-Lawson School of Construction, Virginia Tech Blacksburg, VA

- Implemented **SLAM** and **autonomous exploration** in a robot dog with Python
- Developed a **ROS2 architecture** with **Linux** for state estimation and visualization
- Visualized **LiDAR** point cloud data in **RViz** and Gazebo

PROJECTS

- Designed, fabricated, and programmed a **six-legged robot**
- Designed a 4-legged **autonomous** robot body for a plant
- Developed a **Generative Adversarial Network** (GAN) to synthesize human faces
- Implemented a **Deep Q-Network** (DQN) reinforcement learning model to play the videogame 2048
- Replicated AI research papers to reconstruct a Mixture of Experts model from scratch
- Built a Siamese Neural Network achieving 6x faster facial recognition for videos
- Designed an Automatic Speech Recognition (ASR) system for whistled languages

SKILLS

Programming: Python, C, C++, Java, Qiskit, TensorFlow, PyTorch, ROS2, LaTeX, Verilog
Software: LTspice, KiCAD, SolidWorks, VS Code, GitHub, **Quartus**, Questa
Certifications/Awards: AI Safety Fundamentals, Google IT Support Certificate, Best in Course Award, Pamplin Leadership Award, Class of 1955 Scholar, IC CAE Scholar, Dean's List
Languages: English (Native), Spanish (Fluent), Korean (Intermediate)
Other: Soldering, 3D Printing, Laser Cutting, Woodturning