Georgia Elizabeth Ross

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Education and Certifications

University of Florida | B.S. Mechanical Engineering   May 2027
Minor: Physics | Certificate: AI Fundamentals and Applications
GPA: 3.52/4.00; Dean's List 3 Semesters
Related Coursework: Mechanical Engineering Design 1, Modern Physics, Mechanics of Materials, Materials

Certified SOLIDWORKS Associate   August 2023

Skills

Technical: SolidWorks | Inventor | Fusion 360 | MATLAB | Python | Machine Learning | Computer-Aided Design
Professional: Communication | Teamwork | Problem-solving | Adaptability | Leadership

Work Experience

Undergraduate Researcher, FINS Talent Pipeline   March 2024 – Present
Florida Institute for National Security | Gainesville, FL
- Conducted machine learning research on data augmentation, model explainability, and performance optimization
- Created machine learning solutions for image processing and classification tasks, including dataset augmentation
- Implementing optimization algorithms to enhance machine learning model performance and computational efficiency

Mechanical Engineering Intern   May 2024 – July 2024
SKF Group | Salt Lake City, UT
- Designed industrial seals using CAD software, optimizing geometries to enhance performance and reliability
- Supported comprehensive seal manufacturing processes including material selection, molding, and quality control

Undergraduate Research Assistant   January 2023 – October 2023
UF Space, Automation, and Manufacturing Mechanisms Laboratory | Gainesville, FL
- Developed safety algorithms for robotic software to enhance arm movement capabilities and operational safety
- Conducted robot-human interaction testing to validate joint detection and software performance

Design Technician   December 2021 – January 2023
ROOTS Education Company | North Venice, FL
- Conceptualized and designed parts to be implemented onto robotics tables, modeled robotics equipment in Fusion 360
- Developed and validated technical coursework to effectively educate K-12 students about robotics

Projects

FINS Machine Learning Optimization Software   Present
- Developing parameter optimization methods using Python and SciPy on the HiPerGator supercomputer
- Exploring linear quantization of addition methods to increase machine learning model efficiency

FINS Dataset Augmentation Software   April 2025
- Generated counterfeit and non-counterfeit images of electronics for machine learning classification using Python
- Developing solutions to address the problem of counterfeit electronics in the field of national security

SolidWorks Wind Turbine   May 2023
- Collaborated with a group to create a functional wind turbine with working components from scratch
- Produced an animation of the model and voiceover video detailing the inner mechanical workings

Face Detector and Object Recognition Software   April 2023
- Coded face and object detectors using Python, Mediapipe, and cv2 to later be integrated into robotic software
- Self-taught experience with Python for this project

Leadership

Trombone Section Leader, Gator Marching Band   May 2024 – Present
Treasurer, Alpha Eta Chapter of Kappa Kappa Psi   May 2023 – May 2024