

LUCA PISHOS

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EDUCATION

University of Florida, College of Liberal Arts and Sciences	Gainesville, FL
B.S., Computer Science and Mathematics GPA: 3.8	August 2025 - May 2028
Honors: AI Scholar, University Scholars Program, 4x Robotics World Championship Finalist, 9x Robotics Regional Champion	
Relevant Coursework: Graduate Database Systems, Data Structures & Algorithms, Complex Variables, Differential Equations, Linear Algebra	

PROFESSIONAL EXPERIENCE

Honeywell Aerospace	Phoenix, AZ
AI/ML Engineer Internship Python, Docker, Jira, Copilot API, Pandas	May 2026 - August 2026

- Spearheaded the design and development of an automated document-processing pipeline that transforms FAA hardware documentation into a structured logistics matrix, reducing annual processing time from 1,200 hours to 20 minutes (a **99.97% reduction**) and generating **\$184,000** in recurring annual savings.
- Engineered core detection and remediation modules for an autonomous multi-agent system that identifies software defects, performs root-cause analysis, and deploys fixes; projected to save approximately **\$500,000** over 8 months by reducing debugging time.

Geospatial Artificial Intelligence Lab	Gainesville, FL
Applied Machine Learning Scientist Part-Time Python, YOLO, PyTorch, GitHub, Rex-Omni	January 2026 - Present

- Leading an independent, **first-author** research paper on scalable geospatial deep-learning method funded by the **AI Scholars award**, a highly competitive stipend granted to a very limited cohort of undergraduate researchers.
- Integrated open-source machine learning models to build an automated tree detection architecture for satellite imagery, slashing annotation costs by **100%** for the lab through iterative label refinement.
- Accepted for peer-reviewed publication at **ACM SIGSPATIAL**, a premier international conference on geographic information systems, with findings additionally presented at the University of Florida's **Artificial Intelligence Symposium**.

Max Planck Florida Institute for Neuroscience	Jupiter, FL
Computational Neuroscience Researcher Full-Time Python, K-means Clustering, NumPy, Algorithm Design	June 2024 - August 2025

- Co-authored** and **published** original research with the Rangaraju Lab on dendritic mitochondrial remodeling during synaptic plasticity, specializing in the analysis of volumetric and spatial quantification using the MICrONS dataset.
- Pioneered a feature-based classification model achieving **97% detection accuracy** across **70,000+** mitochondria, automatically identifying cristae within dendrites in electron microscopy scans.
- Reduced** post-processing analysis **time by 85%** through the development of a novel approach to mapping the morphology of neurons by establishing a pipeline to construct 3D replica models and characterize the geometry of their outer spines.

FIRST Robotics Team 179	West Palm Beach, FL
Lead Software Engineer Part-Time Python, OpenCV, Embedded Systems, Java, Electronics	November 2021 - May 2025

- Led software development for the **#1-ranked** FRC robotics team in Florida, programming both human-operated controls and autonomous, computer vision navigation systems to complete mechanically complex arena tasks.
- Won **first place** in **nine national competitions** and achieved ranked placement in **four international events** over four consecutive years.

PROJECTS AND PUBLICATIONS

Zero-Shot and Semi-Supervised Learning with Noisy Labels for Scalable Urban Tree Mapping	Gainesville, FL
Preprint ACM SIGSPATIAL 2026 International Conference	January 2026 - August 2026

- Built an annotation-free deep learning pipeline that maps individual urban trees from **57,000+** high-resolution (7.5 cm RGB-NIR) aerial images, using zero-shot detections as training labels and reaching **~80% average precision** in sparse urban areas.
- Improved** tree detection accuracy **by 58%** by engineering a noisy-label distillation framework with a YOLO26 backbone, outperforming 10 competing methods, including semi-supervised and field-leading detectors (RF-DETR, Faster R-CNN, RetinaNet).

Mitochondria Structurally Remodel Near Synapses to Fuel the Sustained Energy Demands of Plasticity	Jupiter, FL
Preprint biorxiv.org/content/10.1101/2025.08.27.672715	September 2024 - August 2025

- Designed and implemented a Python-based neuron analyzer in silico to examine mitochondrial responses to synaptic plasticity by generating spherical sampling regions at dendritic spine bases and computing surface and volumetric metrics within each sphere across **thousands** of spines, dendrites, and neurons.
- Built custom algorithms for neuron skeletonization, spine base localization, spatial clustering, and Boolean mesh intersections, enabling **automated quantification** of mitochondrial width and volume from filtered mesh data.

LEADERSHIP

The Society for Future Programmers	Palm Beach Gardens, FL
Founder & President Part-Time Team Management, Coordination, Public Speaking, Organizational Skills	October 2023 - April 2025

- Started a 501(c)(3) nonprofit focused on motivating young teenagers to acquire programming and developer skills for their future careers, raising **\$10,000+** in donations and grants from renowned institutions.
- Successfully organized two regional coding competitions for high school students, drawing **over 250 participants** from **11 schools**, while coordinating with **two dozen** volunteers and staff.