

EDUCATION

University of Florida

University Honors Program; B.S. Computer Science; B.S. Mathematics; Physics Minor | 4.0 GPA

Gainesville, FL

Aug 2025 – May 2029

- **Graduate Coursework:** Machine Learning Engineering
- **Relevant Coursework:** Complex Analysis, Probability, Enriched Modern Physics, Differential Equations, Multivariable Calculus, Sets & Logic. *Fall 2026:* Linear Algebra, Abstract Algebra, Combinatorics, Advanced Programming Fundamentals, Discrete Math, Undergraduate Research in CISE

RESEARCH & TECHNICAL EXPERIENCE

NCSA FoDOMMaT REU (University of Illinois Urbana-Champaign)

NSF REU Fellow

Urbana-Champaign, IL

May 2026 – Jul 2026

- Engineered geospatial and socioeconomic features and implemented Deep Gravity and Deep Radiation baselines alongside a custom Spatially-Gated Graph Neural Network to predict dyadic migration flow from climate and socioeconomic variables, achieving CPC of 0.68–0.72 while prioritizing interpretability and causal structure.
- Selected for a competitive NSF-funded REU modeling climate-driven migration and socioeconomic impacts of Amazon deforestation, supervised by Dr. Angela Lyons and Dr. Aiman Soliman; delivered a lightning talk to the NCSA REU/SPIN cohort and gave an oral presentation and poster at the STEM Career Exploration and Symposium at UIUC.

SURFLAB

Student Researcher, Geometric Computing

Gainesville, FL

Jan 2026 – Present

- Derived and implemented a trivariate Bernstein-Bézier warping framework from geometric first principles for morphometric analysis of 1500+ lizard vertebrae specimens; selected to the UF University Scholars Program (USP).
- Trained unsupervised clustering models on 3D shape descriptors to classify species; clusters derived from morphology tracked phylogenetic relationships more closely than direct morphological classification, informing an ongoing debate in evolutionary morphology.

GatorAI Project Team

Machine Learning Engineer

Gainesville, FL

Jan 2026 – May 2026

- Designed and implemented a diffusion-based forecasting architecture, as one of 6 engineers on the team, to predict directional movement of S&P 500 excess returns from meteorological and historical price time-series; model exceeded a baseline alpha benchmark in backtesting.

GRiP Club

Software & Firmware Engineer

Gainesville, FL

Jan 2026 – Present

- Implementing tremor-filtering algorithms and motor control firmware in C++/Python for a robotic prosthetic arm and tremor-compensating writing aid to aid people with Parkinsons.

UF Physics Department

Student Assistant

Gainesville, FL

Nov 2025 – May 2026

- Built and maintained production WordPress sites for 25+ physics research labs; collaborated with faculty to design digital recruitment materials and translate technical research into accessible public-facing content.

SELECTED PROJECTS

- **Brain Disorder Classifier (4th Place, Florida SSEF):** Trained multi-class CNN on 11,000+ MRI/CT scans to diagnose gliomas, meningiomas, pituitary tumors, dementia, and Alzheimer's with >90% accuracy. Applied ResNet-50 transfer learning and targeted data augmentation to resolve severe class imbalance, minimizing false negatives.
- **Quantum Circuit Designer:** Built interactive quantum circuit simulator with grid-based gate placement, geometric wire-routing, Qiskit Aer simulation backend, and real-time measurement probability visualization.
- **Pi-crastinator, IoT Productivity System:** Deployed YOLOv8 on Raspberry Pi 5 (70% phone detection accuracy, 15 FPS); coordinated Flask REST API, Pi Camera, Pico W server, LCD display, and LED alerts for real-time distraction detection.

HONORS & AWARDS

- **University Scholars Program (USP), AI Scholar:** Selected for UF's competitive undergraduate research program; funded stipend and faculty mentorship to conduct independent research in geometric computing at SURFLAB.
- **Benacquisto (National Merit) & Platinum Presidential Scholarships:** Full-ride merit scholarships covering tuition, fees, and stipend at UF.
- **Florida Academic Top Scholar**

TECHNICAL SKILLS

Languages: Python, Julia, MATLAB, SQL, L^AT_EX, MicroPython, C++

ML & Data Science: PyTorch, TensorFlow, Scikit-learn, NumPy, Pandas, SciPy, Matplotlib, Jupyter, YOLOv8, OpenCV

Engineering: Git/GitHub, Docker, Linux, REST API, FastAPI, Flask, Streamlit, Pydantic, MySQL, Qiskit