Abigail Lin

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Education

University of Florida | Bachelor of Science in Computer Science | Math Minor
August 2022 - May 2026
GPA: 3.82/4.00
Relevant Coursework: Linear Algebra for Data Science, Intro to Numerical Analysis, Algorithm Abstraction and Design, Introduction to Probability, Mathematics for Intelligent Systems (Fall 2025)

Research Experience

Purdue University, RCAC Anvil REU
May 2025 - Present | Rosen Center For Advanced Computing | Dr. Arun Seetharam, Dr. Nannan Shan

- Creating bioinformatics workflow templates using Bash, Slurm, Python, and Urwid that are easier to use and more accessible than Nextflow and Snakemake.
- Using Apptainer and Docker for container deployment and creation to organize dependencies.

University of Florida, AI Scholars Program
January 2024 - Present | Voiniciuc Lab | Dr. Wenjun Xie, Dr. Cătălin Voiniciuc

- Generated 30 CSLA enzyme mutations using a Maximum Entropy (MaxEnt) machine learning model with HiPerGator.
- Automated experimental assays to analyze the effectiveness of generated enzyme mutations in synthesizing β-mannans.
- Fine-tuning the MaxEnt model using the experimental assay data from the generated enzyme mutations.
- Conducted benchmarking of ProteinGym protein mutation scores using generative models such as ESM2 and SaProt.

University of Central Florida, Applied Computational Mathematics NSF REU
May 2024 - July 2024 | Dr. Carlos Borges

- Worked for 10 weeks as a summer undergraduate researcher, funded by the National Science Foundation.
- Created a Matlab solver of the forward scattering problem for an object with a thin coating and compared the results of the approximated coding via the impedance versus the transmission problem, with a final error of less than 10e-2.

University of Florida, Research Assistant
January 2024 - Present | Voiniciuc Lab | Dr. Cătălin Voiniciuc

- Created programs in Python to automate synthetic biology lab work using 2 Opentrons OT-2 lab robots to decrease the human error of pipetting and increase efficiency.
- Wrote programs to automate the batch editing of GenBank files for Benchling using Biopython and Pandas.

Presentations

2025 UF Spring Undergraduate Research Symposium
July 2024 | University of Florida

- "Using the Maximum Entropy Model to Enhance CSLA Enzyme β-Mannan Polysaccharide Synthesis," *2025 UF Spring Undergraduate Research Symposium*, University of Florida, Gainesville, Florida, April 2025.

Summer Poster Showcase
July 2024 | University of Central Florida

- "Forward Scattering for Thin Coated Domains: Numerical Solution Using Generalized Impedance Boundary Conditions," *Summer Poster Showcase*, University of Central Florida, Orlando, Florida, July 2024.

Involvement

Phi Sigma Rho
January 2024 - Present

- Participated in various sorority events, including volunteering, fostering a supportive community for women in STEM fields.

Women in Computer Science and Engineering (WiCSE)
September 2023 - December 2023

- Mentored a computer science major underclassman, provided guidance and technical instruction as well as, fostering their academic and professional growth.