Samuel Oliveira

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Education

University of Central Florida - BS in Computer Science July 2026

- **GPA**: 3.89/4.0
- **Coursework:** Algorithmic & Mathematical Problem Solving, Bio-informatics, Artificial Intelligence, Optimization

Experience

Varsity Programming Team - UCF Sept 2025 – Sept 2026

- Competed in ICPC competitions nationally for the UCF programming team
- Practiced **25-30** hrs/week in advanced algorithm design and problem solving in C++
- Collaborated in **10**+ hours of structured team practices focused on optimization strategies, and strengthening team communication, collaboration, and competition performance
- Participated in weekly lectures on advanced methods and algorithms for optimization, creative problem solving

Undergraduate Teaching Assistant - UCF Jan 2025 – Present

- Guided **700**+ students in foundational programming and concepts in C/C++
- Assisted faculty in developing personalized grading technology and providing those grades to students

Junior-Varsity Programming Team - UCF Sept 2024 – Sept 2025

- Placed top **20% (454th/2500)** at ICPC North American Qualifiers 2024
- Created data for the problems at UCF's annual High School Programming Contest

Projects

Cow-Basic samueloliveira.xyz/cowBasic

- The Cow-BASIC compiler is a high-performance C++ interpreter that uses matrix exponentiation to efficiently simulate variable updates in multiple nested loops
- Improved time complexity from **O(nm)** to **O(log n * log m)** for **arbitrary sized** loops

Piece It Together samueloliveira.xyz/pieces

- Implemented an interactive grid tool for placing tiles with a 2-SAT validator that checks whether the same configuration is constructible using only L-shaped trominoes
- Grids of size **500x500** can be validated in **less than 1s**

Personal Portfolio samueloliveira.xyz

- Created a competitive programming gallery with visualizations of complex C++ solutions

Academic Projects

Artificial Intelligence: Digit classifier with Neural Networks, Face Recognition with PCA & CRC, regression models

Bio-Informatics: Distance-Based Phylogeny Problem, Pattern Finding with KMP, Finding Motifs with Gibbs Sampler, Genome reconstruction using De Bruin graphs, Local+Global Alignment Problems

Social Network Analysis: Analysis of the American Food Ingredient Network using Web Scrapers and Gephi

Skills & Technologies

Languages: C++, C, Java, Python, React, HTML, SQL, JavaScript, LaTeX, HTML/CSS, XML

Tools & Infrastructure: Git/GitHub, Bash, Linux, VS Code, GDB/Valgrind, Jupyter Notebook, scikit-learn, Excel

Proficiencies: Graph Theory, Computational Geometry, Network Flow, String Algorithms, DP/other Optimizations