

Nicolas Calafiore

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EDUCATION

UNIVERSITY OF FLORIDA

Bachelor of Science

Gainesville, Florida

December 2025

Major in Computer Science;

Cumulative GPA: 3.6/4.0; Dean's List (Spring 2022 - Fall 2023)

Relevant Coursework: Data Structures, Algorithm Design & Analysis, Databases, Embedded Systems, Data Science, Operating Systems

UNIVERSITY PROJECTS

PUML+ (December 2025 - Present)

- Built a native macOS UML editor in SwiftUI that syncs diagrams as .puml files and manifest.json, enabling CLI-agent editing and reloadable architecture docs.
- Implemented an expandable system-map view with force-directed layout to visualize cross-diagram dependencies at both diagram and class levels.
- Architected subsystem isolation feature enabling selective viewing of system interactions, addressing scalability limitations in traditional UML tools.
- Added committed-vs-uncommitted structural diffing with class-, member-, and relation-level change detection for versioned architecture review.

OBSIDIAN COMMUNITIES (Aug. 2024 - Dec. 2024)

- Built FastAPI backend with JWT authentication and RESTful endpoints, enabling peer-to-peer note sharing for Obsidian plugin users.
- Designed SQLAlchemy ORM models with optimized query patterns and input validation for data integrity across 3 contributors' code.
- Led cross-team coordination as primary communicator, managing presentations, demos, and inter-group integration for plugin delivery.

FSM SIMCITY (July 2024 - Sep. 2024)

- Built a Unity/C# city simulation with FSM-driven NPC behavior, need progression, job scheduling, and NavMesh movement for autonomous routines.
- Designed a priority-driven finite state machine managing 5 behavioral states with threshold-based decision logic
- Implemented five activity states (Idle, Eat, Sleep, Socialize, Working) with threshold-based hunger, energy, and social logic.
- Added world registration, housing/workplace allocation, and enter/exit building behavior across homes and commercial structures.

HEXPROCGEN (Nov. 2023 - Oct. 2024)

- Developed a Unity/C# hex-grid world generator that combined layered Perlin noise and rule-based passes to generate water, biomes, elevation, features, and resources.
- Architected a modular procedural world generator with 8 decoupled systems (terrain, diplomacy, fog-of-war, AI, etc.)
- Designed a 5-stage initialization pipeline with explicit dependency ordering to ensure deterministic world generation across interconnected subsystems.

COMMUNITY CONNECT (Aug. 2021 - Aug. 2024)

- Built a Java Swing community-management platform that evolved from a standalone desktop application into a distributed client-server system with separate admin and member portal interfaces
- Implemented socket-based notification system with sender/handler/receiver pattern, enabling real-time updates between admin and portal interfaces.

CERTIFICATIONS & AWARDS

- NVIDIA Fundamentals of Natural Language Processing
- NVIDIA Fundamentals of Deep Learning
- Received the Floridian Medallion Scholarship
- Awarded Dean's List Placement

SKILLS

Languages: C++, C#, Java, Python, JavaScript, ARM Assembly, LUA Scripting

Web Development and Data Tools: HTML/CSS, SQL, fastAPI, SQLAlchemy, Selenium, Jupyter, Node.JS

Software Development Tools and Frameworks: Unity, React, WPF, JavaFX, Swing, Unix Terminal, UML

Additional Experience: Waiter, Amy's on The Avenue (2025–Present) | Cashier, Publix (2018–2022)