

Carlos Catala

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EDUCATION

University of Central Florida

Bachelor of Science in Computer Science | GPA: 3.7

May 2028

Orlando, FL

EXPERIENCE

Software Engineering Intern

ZuLeris Interactive

Jun 2025 – Aug 2025

Orlando, FL

- Implemented a NotificationManager with auto-generated UI and FIFO queue, reducing notification bugs by **75%**.
- Developed an ObjectiveManager with **10+** ObjectiveData assets and event-driven completion, cutting manual tracking effort by **80%** and automating player updates.
- Abstracted game-mode lifecycle via IGameModeManager, refactoring 2 managers and the loader to slash maintenance time by **60%** and support **3** new modes without changes.

Software Engineering Intern

University of Central Florida

Apr 2025 – Jun 2025

Orlando, FL

- Built a web app using **AI** to monitor student performance and growth across a database of **40,000+** students.
- Reduced data query times by **45%** through backend optimizations and caching strategies.
- Collaborated with advisors to design dashboards that surface at-risk students, improving intervention timing and success.

Software Engineering Intern

Crowning Games

Jun 2024 – Aug 2024

Dallas, TX

- Developed new characters for an RPG game, enhancing user experience and receiving positive feedback from **75** players during open-play testing.
- Led weekly **SCRUM** meetings for team task coordination, in on-time deliveries and team productivity.
- Optimized game performance, reducing load times by **30%** and improving rendering for smoother gameplay.

Software Engineering Intern

Miami EdTech

Jun 2023 – Aug 2023

Miami, FL

- Led a **4-developer** team researching STEM education kit integration in schools, that supported a program reaching **500+** students.
- Improved image classifier accuracy by increasing precision **20%** and recall **10%**.
- Developed instructional content to help students and teachers effectively use STEM kits in classrooms.

PROJECTS

Riffs | React, Tailwind, TypeScript, Pitchy

April 2025

- Created a react-based web app that transcribes hummed melodies into guitar tabs, with a Guitar Hero-style interface for editing and playing, improving users learning of the guitar.
- Used **Pitchy** and **FL Studio** for pitch detection and real-time tab generation.
- Implemented dynamic tab rendering using canvas-based fretboard components and state-driven audio mapping.

kmodo.org | Typescript, NextAuth, Drizzle, PostgreSQL, Tailwind, React

Jan 2025 – May 2025

- Built a full-stack hackathon management platform used by **100+** participants for registration and judging.
- Deployed to a **Linux VPS** using CI/CD workflows and domain routing via **Coolify**.
- Integrated protected routes, email verification, and session management using **NextAuth** for secure user flows.

SightSync | Python, OpenCV, Mediapipe, PyAutoGUI, SpeechRecognition, Tkinter

March 2025

- Developed an assistive desktop tool using **eye tracking** and **voice control** to aid users with physical disabilities.
- Integrated real-time gaze detection and mouse control using **Mediapipe** and **OpenCV**.
- Added voice-triggered command parsing with natural language matching to handle clicks, typing, and scrolling.

TECHNICAL SKILLS

Languages: Python, Java, TypeScript, JavaScript, C#, C, C++, HTML, CSS

Libraries/Frameworks: React, Tailwind CSS, tRPC, Next.js, Node.js, Selenium, OpenCV, Mediapipe, PyAutoGUI

Developer Tools: Git, Unity, Prisma, Vercel, Docker, PostgreSQL, Coolify, Godot, IntelliJ, VS Code, Supabase