

Carlos E. Lopez

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EDUCATION

University of Central Florida

Bachelor of Science in Computer Science

Aug. 2024 – May 2028

Orlando, FL

EXPERIENCE

Undergraduate Research Assistant

UCF Analytics, Decision, and Control Lab

March 2025 – Present

Orlando, FL

- Currently developing a prototype addon for *Microsoft Flight Simulator* to integrate **real-world flight data** and simulate historical flight paths.
- Building a Windows application leveraging **SimConnect API** to interface with Microsoft Flight Simulator, supporting aircraft repositioning to user-specified coordinates
- Contributing to ongoing research efforts to support advanced flight data replay and safety analysis.

Hackathon Organizer

Knight Hacks

July 2025 – Present

Orlando, FL

- Collaborating with a team of organizers to plan and coordinate Knight Hacks VIII, a large-scale hackathon.
- Engaging with external partners, including reaching out to industry professionals for potential speaker opportunities.
- Building relationships with student organizations to foster club collaborations, expanding club outreach.

Administrative Assistant Intern

Traveling Aura Mobile Spa

Aug. 2024 – Sept. 2024

Davie, FL

- Organized and managed event data for **20+** partnership opportunities, drafting professional correspondence to support business outreach.
- Developed digital marketing strategies that boosted social media engagement by **15%** during internship

PROJECTS

Riffs | *React, TypeScript, Tailwind, FL Studio, Next.js, Pitchy*

April 2025

- **1st Place Winner** for **Best App Dev** at Bitcamp 2025.
- Built a music app converting hummed melodies into guitar tabs with real-time note detection and interactive gameplay.
- Implemented a camera system to overlay visual guidance onto the user's guitar, assisting with finger positioning.
- Integrated **Pitchy API** for real-time pitch detection and **FL Studio** for key extraction.
- Developed responsive frontend components delivering a sleek, smooth user interface.

Kmodo | *React, Tailwind, TypeScript, Next, tRPC, Drizzle, PostgreSQL*

Jan. 2025 – Present

- **1st Place Winner** of Knight Hacks Spring 2025 Projects Program.
- Developed a centralized dashboard to streamline hackathon event creation, organization, and participation.
- Constructed user input forms and frontend UI components using **React** to improve event management
- Collaborated with the team to integrate frontend components with backend services, ensuring responsiveness

Personal Portfolio | *React, Tailwind, TypeScript, Next, Last.fm*

Feb. 2025 – Present

- Developed a personal portfolio website to showcase my technical journey.
- Designed responsive design with **Tailwind** for an optimized user experience across devices.
- Leveraged **Last.fm API** to display dynamic music listening data, demonstrating API usage and frontend integration.
- Built using **React** and **Next.js** to deliver fast, seamless performance and optimized user experience

Genius Scraper | *Python, BeautifulSoup, Ascii-magic*

May 2025 – Present

- Designed a web scraping application that converts Genius metadata into ASCII art.
- Extracted album artwork and song metadata from Genius.com using **BeautifulSoup** rendering album covers as ASCII art with **ascii-magic**.

TECHNICAL SKILLS

Programming Languages: Python, C, C#, HTML, CSS, JavaScript, TypeScript, Lua

Libraries/Frameworks: React, Next, Tailwind, .NET, ClerkAuth, Uploadthing, BeautifulSoup

Tools/Platforms: Windows, Linux, Vercel, Railway, Node, Github, Git, VSCode, Blender, Figma, VirtualBox, Unity