Christian Lopez

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Education

University of Central Florida Aug 2020 – Current
M.S. Computer Science | ***Expected Grad**: June 2026* *Orlando, Fl*
B.S. Computer Science | ***Grad**: Dec 2024*

Technical Skills

Languages: Python, C, C++, C#, Java, JavaScript, TypeScript, HTML, CSS, SQL (PostgreSQL)
Libraries: NumPy, Pandas, Matplotlib, PyTorch, Scikit-Learn, OpenCV, Flask, FastAPI, React.JS
Tools: AWS (Gateway, Lambda, S3, DyanmoDB), Docker, MongoDB, Jira, Linux, Git

Publications

Aparcedo, A., **Lopez, C**., Kotta, A., & Li, M. (2024). Multimodal Power Outage Prediction for Rapid Disaster Response and Resource Allocation. DOI: 10.48550/arXiv.2410.00017

Experience

Sonovance Oct 2024 – Current
Software Engineer Intern *Orlando, Fl*

- Developed an **AI-powered ultrasound probe** at a **startup** to enhance accessibility to ultrasound technology.
- Leveraged **C#** and **object oriented programming (OOP)** principles to develop medical imaging software.
- Utilized **Python** and **OpenCV** to extract features from 3D medical images, generating a **200 patient dataset**.
- Used **Python** and **Scikit-Learn** to train a **regression model**; predicts kidney location with **90% accuracy**.
- Collaborated with **Stanford University** as **first author** on an accepted abstract for the **UITC Symposium**.

Davis Research Group June 2024 – Dec 2024
Undergraduate Researcher *Orlando, Fl*

- Developed a **deep learning model** capable of predicting power outages; presented at the **52nd IEEE PVSC**.
- Employed **Python**, **NumPy**, **Pandas**, and **PyTorch** to create a 1,000,000-parameter **neural network**.
- Implemented **parallel programming** with **PyTorch** to efficiently train a model on **3,000 satellite images**.
- Utilized **Linux**, **Vim**, **Slurm**, and **Bash scripting** to deploy deep learning models on a HPC cluster.
- Applied **Python**, **Matplotlib**, and **Seaborn** on 15 years of energy grid data to visualize nationwide outage trends.

AVT Simulation May 2023 – Feb 2024
Software Engineer Intern *Orlando, Fl*

- Applied **C++** and **object oriented programming (OOP)** principles to design military simulator software.
- Combined **C++**, **multi-threading**, and **async server-client communication** to host a network of simulators.
- Used **Git** to **create/manage feature branches**, allowing collaborative development across a **15 person team**.

Projects

AI Agent Market Analytics | *2025 Hacklytics @ Georgia Tech* Feb 2025

- Combined **React.JS**, **Node.JS**, and **TypeScript** to design a full-stack web application.
- Leveraged **HTML**, **CSS**, and **TailwindCSS** to design a responsive and accessible user interface.
- Created **3 REST APIs** with **FastAPI** which handle text and image input, hosted on **AWS EC2**.
- Integrated **AWS Polly** into **API endpoints** for **speech synthesis**, enabling text-to-audio conversion functionality.
- Implemented a **CI/CD pipeline** with **Linux**, **Vim**, and **Bash scripting** to automate deployments.
- Deployed a **dynamic web application** on **AWS EC2**, configured with **Caddy** for **domain-based routing**.

DON 4.3 | *NASA* Jan 2024 - Dec 2024

- Utilized **C++** and **multi-threading** to create a low-latency network meant for NASA simulators and computers.
- Combined **C++** with **event-driven systems** in Unreal Engine 5 to create an interactive environment.
- Created an **XML parser** with **Python** to handle object state saving and loading.
- Utilized **Agile tools (Jira)** to manage the **project backlog** and set **sprint goals** for a **4 person team**.