Sebastian Noel

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Education

University of Central Florida — Orlando, FL
Bachelor of Science in Computer Science; Minor in Robotics — *May 2028*

Experience

Software Engineer Intern — Jan 2026 – Present
Bank of New York Mellon — *Orlando, FL*

- Spring 2026 Experiential Intern at BNY

Undergraduate Computer Vision Researcher — Jan 2026 – Present
Center for Research in Computer Vision — *Orlando, FL*

- Spring 2026 Undergraduate Computer Vision Researcher under Dr. Yogesh S. Rawat

Co-founder & Secretary — Jul 2025 – Present
Graphics Programming Knights — *Orlando, FL*

- Co-founded and scaled a nonprofit student organization to **160+ members**, fostering an inclusive community
- Coordinated Render Jam event logistics and management for over **40** participants, culminating in **5** completed projects
- Drove membership growth by **35+** through strategic promotion at Opening Knight and the Knight Hacks RSO Fair
- Established a centralized **Notion** workspace for **6 officers** to streamline event planning and operations by **50%**

Software Engineer Intern — May 2025 – Sep 2025
Data-Enabled Photovoltaics — *Orlando, FL*

- **Co-authored** (as **2nd author**) a research paper on the Multimodal Deep Learning for Photovoltaic Modules (in progress)
- Improved voltage prediction accuracy from **51%** to **77%** by implementing wavelet-enhanced **LSTM** models
- Achieved an R^2 of **53%** and MAE of **0.89** for crack defect prediction using Multi-Layer Perceptrons (**MLPs**)
- Engineered an **image processing pipeline** using **Marimo notebooks**, reducing data processing time by **25%**
- Architected a foundational **Python** package by **refactoring 14 scripts** to accelerate future research and development

Projects

Tide Sense | *React Native, TensorFlow Lite, YOLOv8, SQLite, FastAPI, TypeScript, Python, Gemini, ElevenLabs* — Nov 2025

- Built an AI/CV powered riptide detection mobile app with **React Native/Expo** at the SharkByte 2025 Hackathon
- Engineered a riptide detection system by training a custom **YOLOv8** model on **Roboflow** with **2,200+** annotated ocean images and deploying it via **TensorFlow Lite**, achieving **85%** detection consistency across **100+** scans
- Constructed a **FastAPI** backend with **SQLite**, storing user scan histories and powering the trend analytics dashboard
- Integrated the **NWS API** for real time weather data and riptide safety instructions with **Google Gemini** and **ElevenLabs**

Alto | *Google ADK, Next.js, React, TypeScript, Python, Tailwind CSS, Shadcn* — Oct 2025

- Architected a multi-agent web app, featuring a dynamic calendar for financial planning at the Knight Hacks VIII Hackathon
- Implemented a **Google ADK** workflow coordinating QnA and calendar agents, increasing calendar update speed by **30%**
- Streamlined personalized financial analysis and budget planning using **Plaid API** user data of past transactions
- Designed a **Next.js/TypeScript** front-end with an AI chat interface while maintaining **100%** user session persistence

Next Step | *Next.js, React, Vapi, OpenAI API, TypeScript, Tailwind CSS, Flask, Python* — Sep 2025

- **3rd place winner** out of **50** projects submitted for the **State Farm Challenge** at the ShellHacks 2025 Hackathon
- Created an insurance simulation learning app with AI conversations, aiding **60%** of U.S. adults with low insurance literacy
- Enhanced **Vapi API** voice model parameters to deliver **30%** more concise conversational feedback and analysis
- Implemented dynamic conversation summary interface with **React** and **TypeScript**, featuring visual progress tracking

FE AI | *React, JavaScript, CSS, Google Gemini, TLDraw* — Jun 2025

- Engineered a study tool at the GemiKnights Hackathon to improve the **45.5%** pass rate of the UCF CS Foundation Exam
- Automated grading by processing student work with the **Google Gemini API**, yielding a **90%** accurate point allocation
- Customized a responsive interface with **React** and **Vite**, integrating **TLDraw** to simulate the written exam environment
- Serialized visual solutions into **Base64** encoding, enabling the AI to parse drawings and generate detailed feedback

Technical Skills

Programming Languages: Python, Java, C, TypeScript, JavaScript, HTML, CSS, SQL
Libraries/Frameworks: React, Next.js, Node.js, Flask, FastAPI, YOLOv8, Tailwind CSS, NumPy, pandas, Matplotlib
Developer Tools: Git/GitHub, Linux/Unix, Docker, Jupyter, Marimo, MongoDB, Google ADK, VS Code, Microsoft Office