

# Farhan Mahbub

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## EDUCATION

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**University of Central Florida**  
*Master of Science in Computer Science*

Orlando, FL  
*Expected Grad: December 2026*

## EXPERIENCE

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### Software Engineer

*Oct. 2023 – Jun. 2024*

*Knight Hacks*

*Orlando, FL*

- Cooperated with engineers to design and launch a new responsive website for the KnightHacks club and UCF's 2024 hackathon, boosting event visibility and attendee engagement.
- Implemented an interactive hackathon profile form using **tRPC** and **React**, driving a **10%** increase in user registration compared to previous years.
- Identified and debugged **4** critical UI bugs, enhancing site functionality and improving the user experience.

### Software Engineer CWEP

*Jun. 2023 – Jun. 2024*

*Lockheed Martin*

*Orlando, FL*

- Developed embedded system software in **C++** to receive GPS signals and conducted simulation-based testing, reducing errors by **30%** and enhancing reliability in complex environments.
- Constructed a robust internal GUI tool using **Python** and **PyQt** to capture simulation data with built-in validation, reducing data discrepancies by **20%**.

### Software Engineer

*Oct. 2022 – Jun. 2023*

*Knight Hacks*

*Orlando, FL*

- Engineered high-performance query resolver functions using **Go**, **SQL**, and **GraphQL**, powering the registration process for **500+** participants at UCF's 2023 hackathon.
- Collaborated with engineers on thorough integration and unit testing, ensuring the website's reliability and scalability under high traffic conditions.

## PROJECTS

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### Story Sensei | *TypeScript, Svelte, SvelteKit, OpenRouter, SQL, PostgreSQL*

- Co-developed an AI-powered Japanese language learning app focused on engagement and user-driven progression.
- Implemented authentication flows with input validation, password hashing, email verification, and Google OAuth, enhancing application security.
- Integrated **OpenAI API** with **React** to generate multiple-choice quizzes based on daily AI-generated Japanese stories, gauging the users' reading comprehension.
- Cached AI-generated content in **PostgreSQL** for 24 hours, cutting latency by **80%** and minimizing API costs.

### Handy Dollar | *TypeScript, React, TailwindCSS, Next.js, Supabase, Azure, Plaid, OpenAI*

- Secured **2nd place** out of **104 teams** in Google's challenge at ShellHacks for developing an AI-powered budgeting tool to help users understand their spending analytics.
- Integrated **Azure AI Vision** with **OpenAI API** to extract and process transaction data from paper receipts.
- Developed an interactive financial analytics dashboard using **React** and the **Plaid API**, enabling users to track spending and budget more effectively.

### Find My Professors | *TypeScript, React, TailwindCSS, Next.js, Chart.js, Go, GraphQL, SQL, PostgreSQL*

- Awarded **1st place** out of **8 teams** at the KnightHacks Projects Showcase for creating a tool that helps college students find suitable professors.
- Built a dynamic front-end using **React** and **Chart.js** to visualize professor analytics and course insights.
- Leveraged **Go**, **SQL**, and **GraphQL** to efficiently retrieve school and course data, streamlining the professor search process and saving students' time.

## TECHNICAL SKILLS

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**Languages:** Java, Python, C, C++, Go, PHP, HTML, CSS, JavaScript, TypeScript, SQL, GraphQL

**Frameworks:** TailwindCSS, Node.js, React, Svelte, Vite, Next.js, SvelteKit, Express.js, Flask, tRPC

**Tools:** Git, Figma, Ubuntu, AWS, Azure, Supabase, Docker, Relational databases, NoSQL databases