

# Colton Maring

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## EDUCATION

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

Orlando, FL  
Aug. 2021 - May. 2025 | **GPA: 3.74**

## WORK EXPERIENCE

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### Florida Space Institute

Sep. 2024 - Present

*Software Engineer Intern*

Orlando, FL

- Wrote unit-tested firmware in C++ and designed a custom PCB incorporating an ESP32 MCU and TMC2208 motor drivers to streamline diagnostics and maintenance of earlier robotic systems
- Developed a cross-network robotics teleoperations interface with JavaScript and WebSockets over TLS
- Utilized version control with Git and issue-tracking tools to facilitate teamwork and meet deadlines
- Implemented a GitHub Actions CI/CD pipeline for **rerassor.com**

### UCF Artificial Intelligence Initiative

June 2024 - Present

*Undergraduate Researcher*

Orlando, FL

- Applied modern convolutional neural network models with Google's MediaPipe and OpenCV for hand gesture recognition, enabling real-time human interaction with a quadruped robot dog via the Unitree Robotics SDK
- Containerized the program, writing a Dockerfile to configure the build environment with CMake and incorporate necessary C++ and Python dependencies inside the container, speeding up development and deployment

### National Center for Simulation

June 2024 - Aug. 2024

*Lab Assistant*

Orlando, FL

- Contributed to the development of simulation training tools, including flight and driving simulators, by writing automation scripts in BASH, developing JAVA plugins, and working with multiple SDKs
- Authored technical documentation for various robotic systems and delivered multiple educational presentations on their operation, ensuring comprehension across diverse audiences
- Implemented STEM-themed robotics and programming challenges for summer programs, teaching the foundations of C and Python programming

## PROJECTS

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### Musical Training Tool | *Javascript, ML/AI, AWS, Bootstrap*

- Led the development of Scale Sense, an online musical training platform delivering real-time musical scale feedback, implementing a deep convolutional neural network for pitch detection, with support for 40+ scales and instrument transpositions
- Awarded **3rd place** in the overall category at the KnightHacks Hackathon out of 700+ participants

### Debt Management Platform | *React, Node, Express, Plaid, LLMs*

- Developed a web application leveraging the Plaid API and OpenAI 3.5-turbo to analyze users' bank transactions, categorize expenses, and provide personalized suggestions for improving debt repayment plans through interactive visualizations
- Ensured protection of sensitive user data by adhering to user data safety best practices and utilizing secure protocols and authentication APIs

### Code Sharing and Storage Website | *MongoDB, Express, React, Node, JWT*

- Created a full-stack web application for code sharing and storage, enabling users to seamlessly upload, manage, and share code snippets or text, complete with CRUD operations and syntax highlighting for enhanced readability
- Developed REST APIs, implemented user email authentication, adhered to UI/UX accessibility standards, and created custom middleware for validating user sessions with JSON Web Tokens

## TECHNICAL SKILLS

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**Languages:** JavaScript, Python, Java, C, C++, Bash, HTML/CSS, SQL

**Frameworks and Libraries:** Node, Electron, React, Express, PyTorch, Bootstrap

**Tools:** Git/version-control, Docker, Linux, Windows, AWS, Cloud Computing, CMake, Jira, Microsoft Office