

JULIEN A. SANCHEZ

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EDUCATION

Georgia Institute of Technology

Bachelor of Science in Computer Science — Honors Program

Atlanta, GA

Expected May 2025

Concentrations: **Intelligence & Information Internetworks**

Relevant Coursework: Artificial Intelligence, Computer Vision, Machine Learning, Natural Language Processing.

Awards: Dean List - Fall 2021 & Spring 2022 (University of South Florida), Spring 2023, Spring 2024. Florida Academic Scholar - 2021 Cohort. Tapia Scholar - 2022, 2023, 2024. HSF Scholar - 2024

EXPERIENCE

John Deere - Embedded Operating Systems

Cary, NC

Software Engineering Intern

May 2024 - August 2024

- Implemented NVM retention, watchdog processes, and other critical OS functionalities and features within an Agile Scrum team.
- Developed the migration of an automated testing software for microcontrollers from C# and Groovy to Python 3.11, integrating custom python modules and achieving a 30% reduction in debug time.
- Delivered technical training on controller abstraction and hardware-in-the-loop environments to leadership and 136 employees through presentations and knowledge-sharing sessions.
- Initiated and led a global Employee Resource Group (ERG) to connect employees across three continents, fostering cultural discussions and inclusivity over sports.

John Deere - Enterprise Engineering Support

Moline, IL

Software Engineering Intern

May 2023 - August 2023

- Pair-programmed and gained user-story experience with an Agile Scrum team to enhance user experience in PTC Windchill, PTC Creo, and SAP primarily in Java.
- Developed a MATLAB-based internal tool to validate built-to-order combine configurations, saving \$4 million annually and increasing efficiency by 50% or 150 hours year-to-year.
- Researched, designed, and presented the implementation of CAD digital-twin software for custom machine visualizations, contributing to foundational design and enhancing visualization capabilities.
- Automated the process of modifying administrative privileges during the transition of engineering teams, streamlining access management and improving security.

SKILLS & PROJECTS

Languages/FrameWorks: **Python, Java, C#, C++, C, HTML, Swift, JavaScript, React Native, Node.js, Express.js**

Contractor Safety Data Interface — **Contracted for Siemens** (In-Progress)

- Developing a cross-platform mobile app using React Native for iOS and Android, streamlining contractor safety data collection and monitoring with real-time data entry and compliance tracking.
- Implementing a Node.js and Express.js backend, with MongoDB for flexible, scalable data storage and retrieval.
- Securing the app with OAuth 2.0 for authentication and end-to-end encryption to ensure data protection and compliance with industry standards.
- Building a RESTful API to handle secure communication between the mobile frontend and backend, supporting real-time data updates and integration with Siemens systems.

MorseTalk — **iOS App**

- Developed an iOS app with my team in Swift that uses CoreML and Vision frameworks to detect hand poses via the front-facing camera and convert them into Morse Code and English text in real time.
- Personally increased data collection efficiency by 20% through optimizing Vision framework hand pose detection, using selective frame processing, reducing image resolution, and leveraging multi-threading with Grand Central Dispatch to improve real-time performance.
- Personally designed and built the app's user interface from scratch in SwiftUI, focusing on intuitive navigation, real-time feedback, and customizable accessibility features like dynamic font sizing and contrast controls for users.
- Helped train and integrate custom CoreML models for hand pose recognition, fine-tuning them for improved accuracy and responsiveness, allowing for smooth and reliable gesture-to-text translation.

LEADERSHIP

Georgia Tech Honors Program, **Student Development Committee Lead**

August 2022 – Present

- Advocated for diverse admissions policies, successfully increasing representation of under-represented communities resulting in a 20% increase in applications, enhancing the cultural and intellectual diversity.
- Organized and led high-impact academic and career-building events, attended by over 500 Honors Program students, to support their professional development and academic success.