

# Hector Saucedo Soledad

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## EDUCATION

New Jersey Institute of Technology

Bachelor of Science

Major in Computer Science

Newark, NJ

Expected Graduation May 2025

## SKILLS

**Languages :** C, Bash, Python, Java, JavaScript, PHP, Git, SQL, Tailwind, TypeScript, Kotlin, Swift, TypeScript

**Libraries & Frameworks:** React, Express.js, React Native, PyTorch, Next.js, Tailwind, Flask, Pandas, Selenium, Scikit-learn

**Developer Tools:** AWS, Git, GitHub Actions, RESTful APIs, Docker, Figma, Storybook, MongoDB

## EXPERIENCE

**Airweb Digital**

Atlanta, GA

*Software Engineer Intern*

Nov 2023 – Apr 2024

- Developed a mobile application that provided clients with the ability to request a drone service and reduce scheduling turnaround time by about 25% using React Native and Flask .
- Refactored in-house React Components and Hooks to ensure compatibility with Google API's and tested them via Storybook, Unit Tests (100% Jest coverage), and Cypress E2E Testing.
- Optimized user retention by incorporating push notifications and holding constant communication with my supervisor.

**MIXR Laboratory**

Newark, NJ

*Research Assistant*

Jan 2023 - May 2023

- Converted raw data into an R dataframe, pre processed, cleaned and performed statistical analysis.
- Produced visualizations for a research paper using ggplot2, shiny, dplyr libraries.
- Results indicated that when a realistic controlling scheme is paired with an immersive display type, symptoms associated with simulator sickness tend to decrease.
- Motahari, K., & Vinnikov, M. (n.d.). Subjective Assessment of Commercially Common Input and Display Modalities in a Driving Simulator. *Scitepress*. <https://doi.org/10.5220/0011528800003323>

## PROJECTS

**Deals4U** | *React, Express.js, JavaScript, Tailwind CSS, BeautifulSoup, PostgreSQL, Bash, Heroku*

- Managing a deployed web application that automates the daily scraping of discounted products from major retailers, allowing users to save products of interest and directly visit retailer websites.
- Collaborated in building a full-stack solution using BeautifulSoup to parse and extract product information from XML. Storing this data in a PostgreSQL database which is connected with a user-friendly frontend via an Express app, enabling real-time data retrieval and display using React.

**SAM Fine Tuning for Remote Sensing Applications** | *Hugging Face, Pytorch, Shiny, Python, Data Annotation*

- Optimizing accuracy for sidewalk segmentation utilizing the SAM model within a Pytorch environment. Overcome challenges posed by narrow pathways and occlusions in urban settings by employing segmentation metrics—Intersection over Union, Dice Coefficient, and F1 Score.
- Users can utilize the model by uploading an overhead image and instantly receiving sidewalk segmentation via a Shiny web app under development.

**Multiple Object Drone Tracking** | *YoloV8, OpenCV, Kamal Filter, Pytube*

- Trained the YOLOV8 deep learning model to detect cyclists and cars from drone footage processed by OpenCV.
- Implemented algorithms that combine object detection and data association techniques when drawing reliable predictions using the Kalman Filter on objects with a CI  $\geq 60$ .
- Won 1st place in academic competition where the model was measured on mitigating factors such as occlusion, motion blur, and changes in object appearance.

**Android Wordle App** | *Kotlin, Jetpack Compose*

- Built an Android application using Kotlin and Android Studio where users have three chances to guess a four letter word.
- Leveraged ConstraintLayout and Jetpack Compose to achieve an aesthetically pleasing UI from user feedback.