

Hector Saucedo Soledad

Newark, NJ | hs78@njit.edu

EDUCATION

New Jersey Institute of Technology

Bachelor of Science

Major in Computer Science

Newark, NJ

Expected Graduation May 2025

PROJECTS

Deals4U

April 2024 - Present

- 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.
- 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.

Segment Anything Model Fine Tuning for Remote Sensing Applications

April 2024 - Present

- 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

March 2024

- Trained the YOLOV8 deep learning model to detect cyclists and cars from drone footage using OpenCV to process videos.
- Implemented algorithms that combine object detection and data association techniques when drawing reliable predictions using the Kalman Filter on objects with a CI ≥ 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.

Cookbook Web Application

Aug 2023

- Developed a full stack solution that allowed users to have a personal cookbook where they could add, edit and delete recipes.
- Through the use of APIs, provided features like food/ingredient lookup, encouraging healthy choices and ease of use.
- Enforced security through the use of user registration, login, profile management and implemented ASVS standards including the hashing of passwords through PHP.

WORK EXPERIENCE

Software Engineer Intern - Airweb Digital

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.
- Provided location-based services, including mapping and geolocation features by integrating Google APIs.
- Optimized user retention by incorporating push notifications and holding constant communication with my supervisor.

Media and Technology Support Technician - New Jersey Institute of Technology

Sep 2023 – Present

- Diagnosing and resolving connectivity problems between Windows machines and projectors, HDCP handshake issues, audiovisual equipment malfunctions within a classroom technology setting.

Tutor - Essex County College

May 2023 - Present

- Increasing students' test scores by an average of 35% by conducting one-on-one tutoring sessions addressing individual student needs and learning goals.

Research Assistant at MIXR Lab - New Jersey Institute of Technology

May 2023

- Produced reader-friendly visualizations utilizing R for data analysis, generating datasets, applying statistical methods. Reported research results, adhering to journal conventions, to effectively communicate findings and insights.
- Results indicated that when a realistic controlling scheme is paired with an immersive display type, symptoms associated with simulator sickness tend to decrease.

Skills

Languages : C, Bash, Python, Java, JavaScript, PHP, Git, SQL, Tailwind

Technical: React, Express.js, React Native, PyTorch, Docker, Operating Systems, UNIX, Databases, API Usage, Web Scraping

Courses: Data Structures and Algorithms, Artificial Intelligence, Machine Learning, Programming in Linux, Systems Administration, AWS