Laura Madrid

EDUCATION

Junior AI Researcher & Software Engineer Seeking technical research and engineering roles.

Sep 2019 - Jun 2024

University of Toronto

Honours Bachelor of Science in Computer Science - Entrance Scholarship

Mississauga, Ontario

• Teaching Assistant: Computer Programming, Computer Science, Theory of Computation, Computer Organization, Databases, Ethics in Computer Science

RESEARCH & INDUSTRY EXPERIENCE

Experiential Education Unit - University of Toronto

Sept 2024 – Present

Graduate Research Assistant- UTM Co-op Internship Program (UTMCIP)

Mississauga, Ontario

• Support the launch of the UTMCIP by providing disciplinary expertise and assisting in the delivery and evaluation of Work-Readiness Modules.

MEDCVR Lab - University of Toronto

Jan 2024 – Present

Research Assistant- Medical Computer Vision & Robotics Lab

 $Mississauga,\ Ontario$

- Developing an internal application to analyze vocal fold movement in laryngoscopies using OpenCV and SciPy.
- Enabled automatic identification of larynx and trachea landmarks with HSV color masks, a **DeepLabCut** model for annotation, and a segmentation model to focus on specific anatomical regions.

AIRY3D - Core Team

May 2024 - Nov 2024

Computer Vision Software Engineering Intern

Montreal, Quebec

- Researched and implemented SOTA outlier removal methods for captured point clouds in C++.
- Developed an ISP (Image Signalling Processor) pipeline in C++ using OpenCV.

Zillow

May 2023 - Aug 2023

Software Development Engineering Intern - Rich Media Experiences (RMX) Team

Remote

- Integrated Apple's **RoomPlan API** into the AR room capture app, streamlining a multi-step manual process into a single iPhone scan.
- \bullet Implemented ARS ession relocalization, and 2D/3D floor plan generators with furniture.
- Delivered a comprehensive report to the RMX team, incorporating key WWDC23 updates for ongoing initiatives.

Zillow Engineering & Leadership (ZEAL) intern

Jun 2022 – Aug 2022 *Remote*

- Completed rotational projects with the Rental Revenue Platform (RRP), Premier Agent iOS Mobile (PA iOS), and Constellation Design System (CDS) teams, and participated in Zillow's annual Hackweek competition.
- RRP Team: Enhanced data handling efficiency by streamlining database access, using a Java Job Trigger to export Parquet-format tables to the AWS Datalake.
- PA IOS Team: Developed a contact details page for Real Estate agents using UIKit and JSON data parsing.
- Hack-week Competition: Team won 2nd place in the Product Features & Business Ideas category, for which I modified USDX models using the RoomPlan API.
- CDS Team: Redesigned the Constellation documentation platform and improved navigation via an upgraded search UI with React, GraphQL and Styled Components.

Tiary Inc.

Jun 2021 - Aug 2021

 $Software\ Development\ Intern$

Toronto, Ontario

• Revamped web pages (Blog, FAQ, Checkout, Order Tracking) using **React** and developed Tiary Studios' info site with **JavaScript**, **Gatsby**, and **GraphQL**, improving site functionality and user experience.

Microsoft

 $Jul \ 2019 - Aug \ 2019$

Intern

Mississauga, Ontario

• Developed a **PowerApps** Inventory Management Platform with a team of 5, reducing marketing material request time and presenting it at Microsoft's National Annual General Meeting.

PROJECTS

Indoor Rock-Climbing Assistance Tool (IRCAT) \bigcirc \square | Python, OpenCV, YOLOv8

Sep 2023 – Present

• Won a \$1500 research grant and presented project at the 2024 UofT Summer Undergraduate Research Fair.

Brain Tumor Classification Model (7 🗗 | Python, TensorFlow

Sep 2023 - Dec 2023

• Won 1st place at the UTMSU Undergraduate Research Symposium.

Skills & Courses

Languages: Spanish (Native), English (Fluent), French (DELF B1), Italian (Beginner)

Developer Tools: Python, C++, Swift, Deeplabcut, OpenCV, PyTorch, TensorFlow, YOLO, RoomPlan, React, Gatsby, Firebase, AWS, HTML, CSS, PostgreSQL, Figma

Relevant Courses: Image Understanding, Machine Learning, Neural Networks and Deep Learning, Medical Robotics, Mobile Robotics, Ethics for Computer Scientists.