

Myron Truesdale

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EDUCATION

Masters of Science (M.S.) - Computer Vision and Graphics

Aug 2025 - Fall 2028

Georgia Institute of Technology

Relevant Coursework: Robotics AI Techniques

Bachelor of Science (B.S.) - Computer Science, GPA: 3.473

Aug 2020 - Dec 2023

University of Maryland, College Park

College Park, MD

SKILLS

Experienced Languages: C++, Python, C, x86 Assembly

Familiar Languages: HLSL, Java, Ruby, HTML, CSS, Rust, Matlab, R, Racket, Haskell, OCaml, MIPS, SQL, Javascript

Tools/OS: Visual Studio, CMake, Git, Perforce, Wireshark, Docker, GDB, MongoDB, Linux, Windows 10/11, MacOS

PROJECTS

Real-Time Asteroid Tracking & Path Planning

- Built a 6-state constant-acceleration **Kalman filter (Python)** to predict asteroid (x,y) one step ahead; derived Q from the **motion model** and adapted R (noise covariance) via EWMA of innovations.
- Implemented a jump planner under range/boundary constraints to maximize vertical progress toward goal, integrated tightly with the estimator.

GMM-Based Soccer Ball Detection

- Developed a **Python** tool for soccer ball detection, utilizing a **Single Gaussian model**
- Enhanced color thresholding and detection accuracy by implementing a **Gaussian Mixture Model (GMM)**.
- Leveraged the **HSV color space** to improve **color masking** and segmentation precision.
- **Visualized complex data distributions** by plotting **GMM Ellipsoids** with **Ellipsoidal Sigma**
- Calculated the relative distance to the soccer ball in pixels for depth information

File Manager

- Developed a file manager inspired by **Windows**, using a **Splay Tree Data Structure** for search efficiency.
- Leveraged **full-stack development skills** in Python to build the **back-end** splay tree logic and **front-end** GUI
- Incorporated the **splay tree data structure** to improve **search and retrieval performance** within the application

Racket Compiler

- Developed a parser, interpreter, and compiler for the Racket programming language using **Racket and x86 Assembly**
- Implemented **type-handling** mechanisms for better type safety and **variable management** for **dynamic programming**
- Enabled the compiler to process and execute **user-defined functions** and optimized it for **tail call recursion**
- Supported **lambda functions** to facilitate functional **programming paradigms**
- Verified program correctness by utilizing the **Racket REPL environment**

EXPERIENCE

Computer Scientist

February 2024-Present

Manned Flight Simulator, NAVAIR

Naval Air Station Patuxent River

- Collaborate within a high-performing **Agile** team to deliver product features on a regular sprint cycle
- Use **OpenCV** and **C++** in projects performing real-time **tracking** to simulate warfighter platforms
- Develop using **C++** and **Blueprints in Unreal Engine 5** to contribute to a high fidelity in-house simulation **image generator** capable of attaching to physics and airframe applications
- Work with **Varjo XR3, XR4, Valve Index VR** headsets and **projector-dome displays**
- **Integrate** leading simulation technologies such as motion platforms, XR, and vestibular nerve stimulation
- Develop an in-house plugin for applying water interactions that can be applied to different ocean assets
- Develop a debug host (**C++**) that uses in-house network protocol libraries to support **product testing**
- Develop a QA tool used to validate databases for fair fight in simulation using **C++**, **OpenCV**, and **GDAL**

Undergraduate Research Assistant

November 2023-May 2024

ARLIS, UMD

College Park, MD

- **Testing and Simulation** for self-autonomous vehicles in off-road environments
- **Full-stack** development for simulation tools and software used to drive the environment using **customtkinter**
- Handled **CSV** files using **Pandas** and **python**, pulling and manipulating information from **AWS S3 Buckets**

Computer Science Teaching Assistant

Sep 2022 - May 2023

University of Maryland, College Park

College Park, MD

- Facilitated office hours and assisted in **debugging student C and Racket/x86 code** to provide academic support for "Introduction to Compilers" (**200 students**) and "Introduction to Computer Systems" (**890 students**).
- **Collaborated with the lead professor** on exam content and evaluation criteria and **Graded assignments**

HONORS & AWARDS

Eagle Scout - Boy Scouts of America

2020