

# Myron Truesdale

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## EDUCATION

**Bachelor of Science (B.S.) - Computer Science**, GPA: 3.41

*University of Maryland, College Park*

Aug 2020 - Dec 2023 (Expected)

*College Park, MD*

**Relevant Courses:** Advanced Data Structures, Compilers, Linear Algebra, Computer Systems, Algorithms, Computer Vision, Javascript, Data Science Techniques, Computer and Network Security, Programming Languages and Paradigms, Organization of Programming Languages, Applied Probability and Statistics I/II

## SKILLS

**Frameworks:** Docker, Node.js, React.js

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

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

**Tools:** Linux, Windows 10, MacOS, GDB, Junit, Apache, MongoDB, MySQL, GitHub, GitLab, Power BI

## PROJECTS

### **Titanic Machine Learning Analysis**

November 2023

- Preprocessed the Titanic dataset with techniques like **one-hot encoding**, preparing it for **machine learning models**.
- Utilized **scikit-learn** (python) to train and evaluate **decision trees**, **SVMs**, and **random forests**, achieving up to 82.42% accuracy on test data.
- Leveraged cross-validation for robust model evaluation and derived insights from feature importance analysis.

### **GMM-Based Soccer Ball Detection**

September 2023

- 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)**.
- Calculated the relative distance to the soccer ball in pixels for depth information
- Leveraged the **HSV color space** to improve **color masking** and segmentation precision.
- **Visualized complex data distributions** by plotting **GMM Ellipsoids** with **Ellipsoidal Sigma**
- Explored the strengths of GMM while acknowledging its limitations in handling complex scenarios

### **File Manager**

June 2023

- Engineered a file manager application, drawing inspiration from **Windows File Manager**, and implemented it using a **Splay Tree Data Structure** for optimized search functionality.
- Leveraged **full-stack development skills** in Python to build both the back-end splay tree logic and front-end GUI components
- Incorporated the splay tree data structure to significantly improve **search and retrieval performance** within the application

### **Racket Compiler**

May 2022

- Developed a parser, interpreter, and compiler for the Racket programming language using **Racket and x86 Assembly**
- Implemented **type-handling** mechanisms for better type safety
- Enabled the compiler to process and execute **user-defined functions**
- Optimized for **tail call recursion** to improve performance
- Integrated **variable management** to allow for **dynamic programming**
- Supported **lambda functions** to facilitate functional **programming paradigms**
- Verified program correctness by utilizing the **Racket REPL environment** to compare results between local test cases and established Racket outputs

## EXPERIENCE

### **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**
- **Resolved student queries**, enhancing understanding and improving course engagement.

### **Swim Club Head Manager**

Jun 2018 - September 2023

*DRD Pool Management*

*Hunt Valley, MD*

- Managed swim club facility, overseeing a team of **32 staff members** to ensure efficient operations
- Represented DRD Company in **communication with the pool board, members and other clients**, addressing concerns and maintaining positive relationships

## HONORS & AWARDS

### **Eagle Scout**

2020

*Boy Scouts of America*