

Max A. Ernst

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Education University of Michigan

📍 Ann Arbor, MI

B.S.E Computer Science and Engineering, Ross Minor in Business

📅 August 2020 - May 2024

GPA: 3.40 **Expected Graduation:** May 2024

Coursework: Self Driving Cars and Drones: Introduction to Autonomous Electrical Systems, Applied Linear Algebra, Introduction to Computers and Programming, Minds and Machines, Programming and Data Structures, Discrete Math

Purdue University Seminar for Top Engineering Prospects

📍 West Lafayette, IN

Summer Engineering Program

📅 July 2019

Skills

Experienced: C++, Python

Proficient: Matlab, R, HTML, CSS, OpenCV, NumPy

Novice: Java, Unity Development Engine, Javascript

Experience UM: Autonomy (University of Michigan Autonomous Boat and Drone Project Team)

📍 Ann Arbor, MI

Member of Electronics Division and Software Division of Drone Team

📅 September 2021 - Ongoing

- Created an exact copy of the electronics box of the drone to use as an electronics testing rig to test software without putting the drone at risk
- Designed and trained convolutional neural network to identify target landing zones using openCV
- Developed method of determining positional data based off of object identification from a camera

MRover (University of Michigan Mars Rover Project Team)

📍 Ann Arbor, MI

Member of Autonomous Division of Software Team

📅 August 2020 - December 2020

- Created filter to identify and remove outlier data received from visual camera sensor, eliminating 90% of obstacle detection false positives.
- Improved accuracy of the virtual testing environment for the testing of new perception programs.

Michigan Hackers

📍 Ann Arbor, MI

Member of Security Team

📅 September 2021 - Ongoing

- Engaged in weekly meetings to educate on the principles of computer security and structure and to create Capture The Flag challenges to challenge other members of the club
- Participated in Down Under CTF, NICTF, and BuckEye CTF international hacking competitions, focusing on completing cryptology and web security challenges

GB AIR (Granite Bay High School Aerial Drone Team)

📍 Granite Bay, CA

Project Team Manager

📅 January 2019 - December 2019

- Built and programmed five remote control planes of differing designs and one remote control quadcopter.
- GB AIR team manager focusing on education of new members and project management.
- Met team goals of achieving maximum flight time of 120 seconds on planes and 300 seconds on drone

Projects

Personal Website

🔄 max-ernst/github.io

HTML and CSS Website

📅 September 2021 - Ongoing

- Created a website to self-teach HTML and CSS, and to self-advertise and display past projects.

Image Adjustment

🔄 max-ernst/EECS280CV.git

C++ Image Adjustment Algorithm Using Computer Vision and Seam Carving

📅 September 2021

- Object aware computer vision determines seams of pixels deemed least necessary to retain important objects in image, and then sequentially removes these seams
- Capable of changing the dimensions of an image without cropping the edges or distorting image

Facial Tracker

🔄 max-ernst/activefacialtracking

Python Active Camera Facial Tracker and Identifier

📅 July 2020 - Ongoing

- Active facial tracker uses webcam to identify faces in view, and attempts to assign identification to face