

## Ethan D'Alessandro

319-594-0878

epdal@umich.edu

### Education

2016-2020	West High School, Iowa City, Iowa	GPA: 4.32
2019-2020	University of Iowa	GPA: 4.12
2020-Present	University of Michigan	GPA: 4.0 (Unweighted)

Academic Awards: William J. Branstrom Freshman Prize, University of Michigan Dean's List, University of Michigan Honors, National Merit Scholar Letter of Commendation, National AP Scholar

### Extracurricular Activities

#### **Policy Debate** (Year Round)

- Researched and formulated solutions to salient political topics including immigration restrictions and US arms exports while practicing effective idea communication in a competitive environment
- **Awards:** East Iowa District Senior of the Year, 2019 NSDA Nationals Qualifier, 2019 Iowa State Runner Up, 2020 National Tournament of Champions Qualifier, 2020 Iowa Caucus Debates Finalist

#### **FIRST Robotics** (Year Round)

- Organized fabrication and development of the robot hardware while supervising and participating in construction
- Repaired broken hardware while under time pressure at regional competitions
- **Awards:** 2019 Lake Superior Finalist, 2020 Lake Superior Champion, 2018, 2020 World Championship Qualifier

### Leadership

#### **Electrical and Mechanical Team Leader** (2018-2020)

- Trained junior members in safety expectations and technical skills required for robot construction
- Delegated fabrication tasks to allow for simultaneous component production
- Developed prototypes for future components to demonstrate usability before creation

#### **Debate Peer Mentor** (2018-2020)

- Led practices for novice members of the debate team including explaining different argumentation styles, topic information, and directing skills drills.
- Volunteered to teach policy debate to members of the local middle school in order to develop improved communication skills leading to multiple tournament winners.

### Work Experience

#### **Data Entry and Analysis** (2021-Present)

- Created variable keys for multiple assessments of faculty and resident perceptions on observation programs in general pediatric clinic for the University of Iowa Department of Pediatrics
- Prepared and input quantitative data for statistical analysis while recording qualitative data for program refinement

## **Technical Skills**

### **Software Languages:**

- Fluency – C++
- Proficiency – Java, HTML, CSS, Matlab

### **Projects**

- Drone Path Optimization  
Use of TSP Heuristic algorithms to find fast minimum drone flight path approximations for large complete graphs as well as Branch and Bound algorithms to find optimal solutions for smaller graphs
- Intelligent Image Caption Generation  
Intelligent caption generation for user-uploaded image using machine learning and automatically tweeting the image utilizing the Twitter API
- Stock Market Simulation  
Simulation of buyer/seller dynamics in the stock market for large numbers of commodities and independent traders
- Maze Routing  
Routing of 3D variable input mazes using Breadth First Search and Depth First Search to find and return solution paths
- Linear Algebra Computation Tool  
Matrix operations on variable size matrices, solutions to linear systems, row/column spaces, determinants and inverses of square matrices
- Content-Aware Image Resizing  
Utilizing seam carving algorithms to preserve image features in a more flexible manner during resizing than cropping or scaling