## **ALEX VESEL**

### CS \ AI

@ avesel@stanford.edu

**\** 262-264-8402

% alexyesel.com

### **EXPERIENCE**

#### Tesla

#### **Software Engineer**

May 2024 - Present

Palo Alto, CA

• Computer vision and deep learning on Sensing team.

### Tesla

### **Algorithm Engineering Intern**

🛗 June 2023 - September 2023

Palo Alto, CA

- Developed inertial sensing algorithms for Tesla vehicles and Tesla Bot (Optimus), including mathematical derivation and implementation
- Computer vision using deep learning models for new vehicle feature
- IMU/GNSS sensor fusion through statistical models

### Research Assistant

### Al for Remote Sensing

🛗 September 2023 - Present

- Research project to create 3D exterior and interior models of buildings at scale
- Leverage computer vision techniques and optimization to extract information from floorplans and align to building exteriors modeled using satellite imagery and aerial lidar
- Experience training models on high performance computer clusters

## **PROJECTS**

## Autonomous Decision Making for Air Taxi Networks CS239 Advanced Topics in Sequential Decision Making

Stanford University

- Formulated the air taxi network problem (ATNP), which models the multi-agent Markov decision process optimization problem of future air taxi services like Joby
- Provided a solution to the ATNP that decomposes the problem into three sub-problems: agent-passenger assignment, flight level selection, and flight trajectory planning
- Created a simulator of the ATNP grounded in potential vertiport layouts across the Bay Area and New York City.
- Implemented solution using Monte Carlo tree search and custom optimization heuristics and ran experiments comparing to common rideshare matching algorithms
- Paper available on arXiv

### Reinforcement Learning in Minecraft

### **Personal Experiments**

Mid 2024 - Present

 Currently exploring on-policy RL methods in Minecraft. Goal is to create a Minecraft world model to enable model-based planning in the latent space

## **EDUCATION**

### M.S. Computer Science

### **Stanford University**

🛗 September 2022 - April 2024

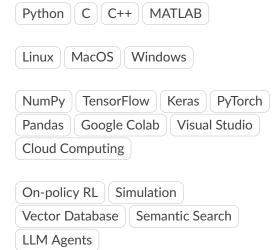
GPA: 4.102 / 4.000

# B.S. Electrical Engineering and Computer Sciences

**University of Wisconsin - Madison** 

GPA: 3.987 / 4.000

### **SKILLS**



## **COURSEWORK**

- Robotic Manipulation
- Computer Vision
- Artificial Intelligence
- ML under Distribution Shifts
- Operating Systems
- Compilers
- Digital Signal Processing
- Statistics

## **INTERESTS**

- Guitar
- Philosophy
- Songwriting
- Psychology
- Weightlifting
- Cinema