



Research

Celeritas

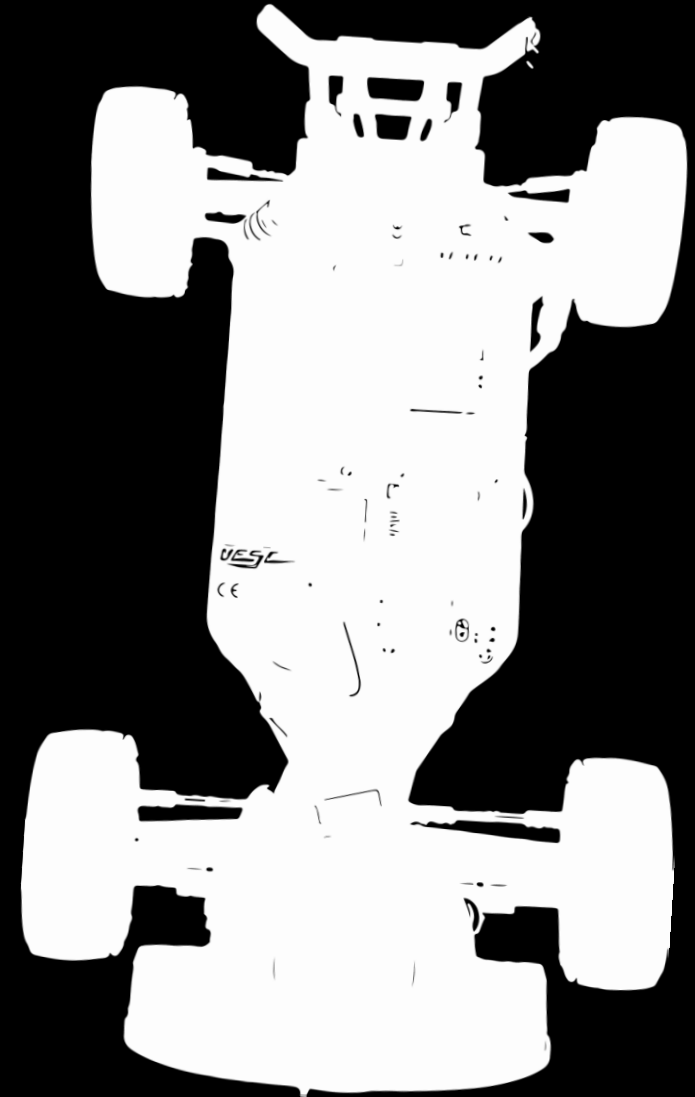
● INTRODUCTION

INTRO MEETING

2024



- **INTRODUCTION**
- **THE ORGANIZATION**
- **PROSPECTIVE RESEARCH PROJECTS**
- **STRUCTURE**
- **OFFICER POSITIONS**
- **ADVISORS AND PROFESSORS**
- **COMPETITIONS**
- **QUESTIONS**

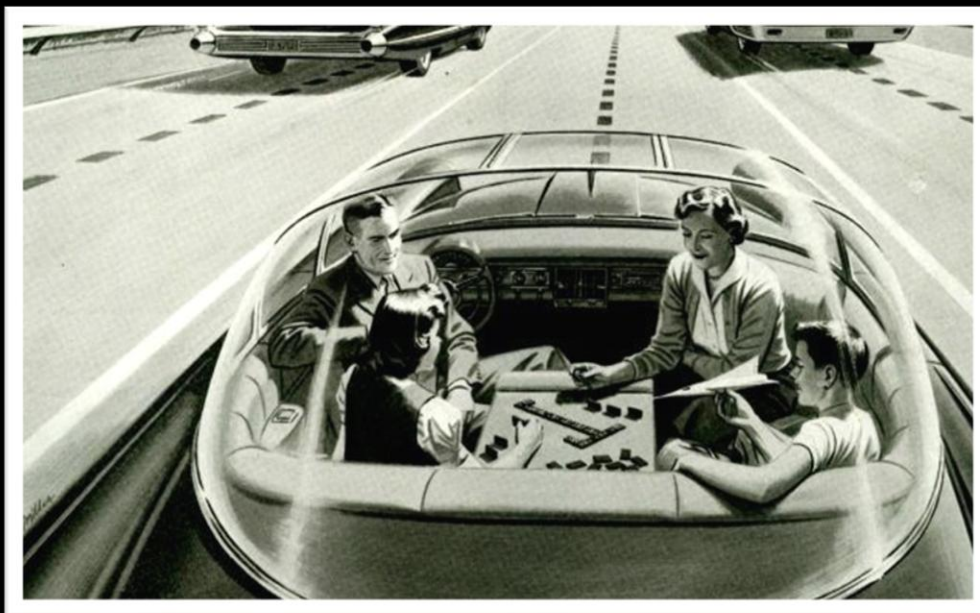


THE ORGANIZATION



- Hope to be the first high school team to win F1Tenth, a collegiate autonomous racing competition.
- Start off with quality graduate-level research papers to establish presence, advised by cracked people.
- After acquiring funding, will move into working on the car

+ autonomous cars would look like this



- Will compete at competitions along the way to F1TENTH (Fall 2025)
- Soon, applications to help members find what research group they would like to be in / which group best suits them
- Extensive experience not needed! Beginners and experts will find quality projects that are useful to them and the field



PROSPECTIVE RESEARCH PROJECTS



- Will work on AI agents for simulation racing, simulating dynamics of car, etc.
- Eg. Learning a Racing Simulator, working on optimizing a model over F1 tracks to transfer.
 - Will be used in Berkeley ROAR simulation racing competition in December.



+ autonomous car software visualized

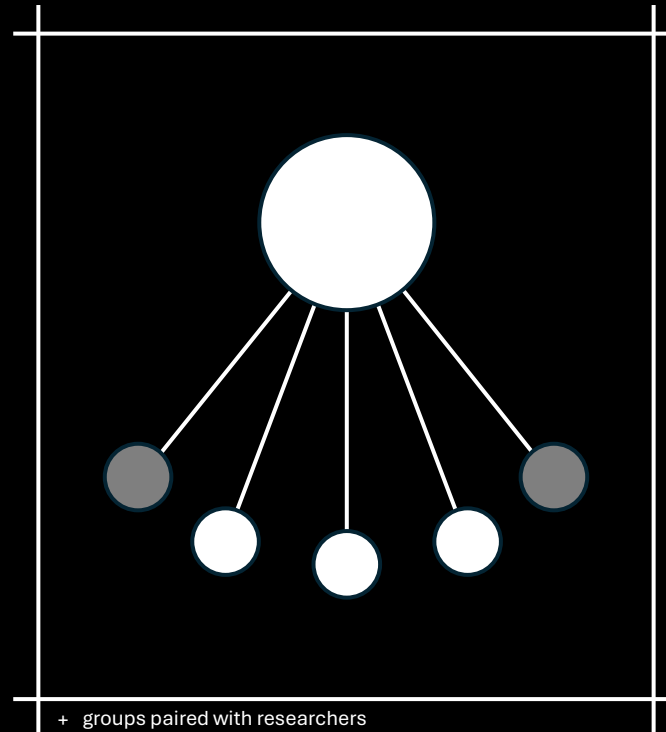
- Advised by students from collegiate racing teams (Waterloo, Berkeley, etc.) and professors and industry experts (Meta, Google, etc.).
- No idea for project? Can join other groups or meet with advisors to decide one.
- Worried about skill level? We will have simpler projects (writing libraries to speed some process, etc.).



STRUCTURE



- Pair researchers in groups of 3 - 5 based on skill level to work on their own research projects guided by their mentor and respective group lead
- Each group will work on their own (published!) research project on various topics of interest



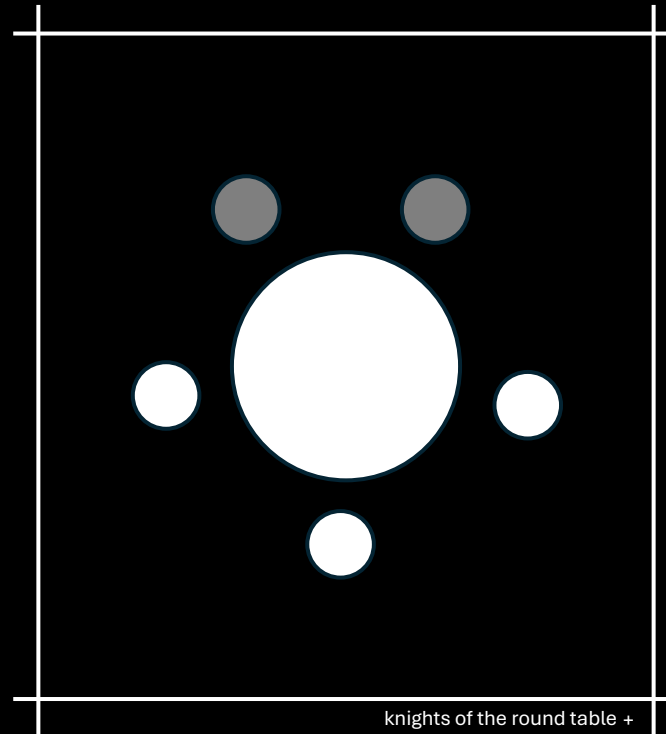
- Soon restructure into team for competitions such as F1TENTH where we will build RC-style cars and race against collegiate teams



OFFICER POSITIONS



- Group lead - Handles and leads respective research group and is first-author on publication
- Director of Communications - Handles all aspects marketing and strategy development, especially communications with sponsors, prospective advisors, etc.



- Director of Finance - Handles financial aspects of acquiring funding and how money is spent throughout the organization

More to come soon!



ADVISORS AND PROFESSORS



- We'll have the support of leading academic and industry professionals from Waterloo, UC Berkeley, Meta, Google, and Stanford
- Advisors will help each group complete their research projects and provide general guidance for the competitions

+ advisors giving us guidance

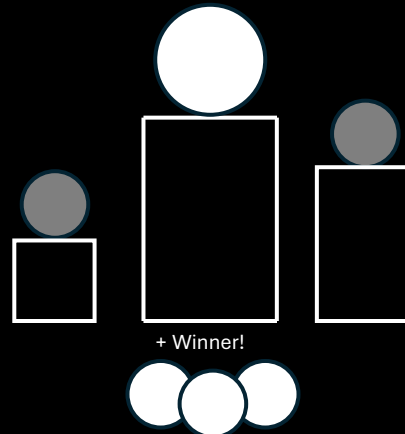
- With this guidance, we're well-positioned to make significant strides in upcoming seasons



• COMPETITIONS



- Planning on participating in Berkeley ROAR (high school and early college teams) for winter and summer simulation races



- F1Tenth competition will be held around October of next year – the ultimate goal
- More info can be found at f1tenth.org



QUESTIONS?