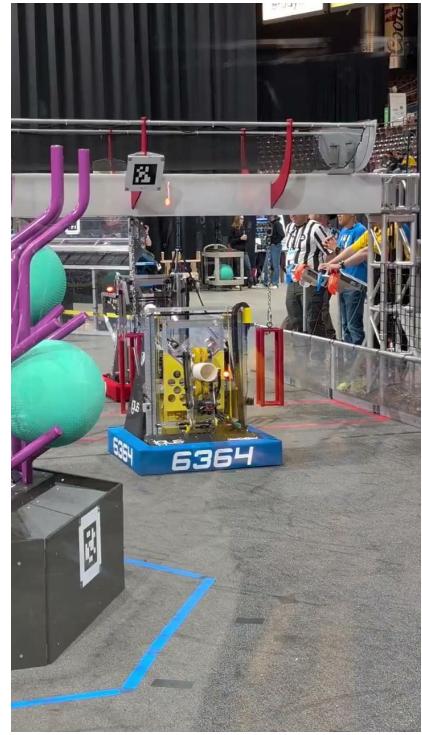
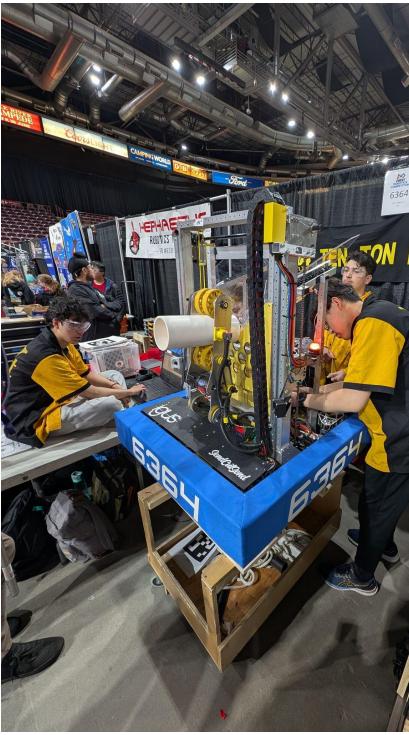


# H I      I'm Jadyn

I build awesome robots

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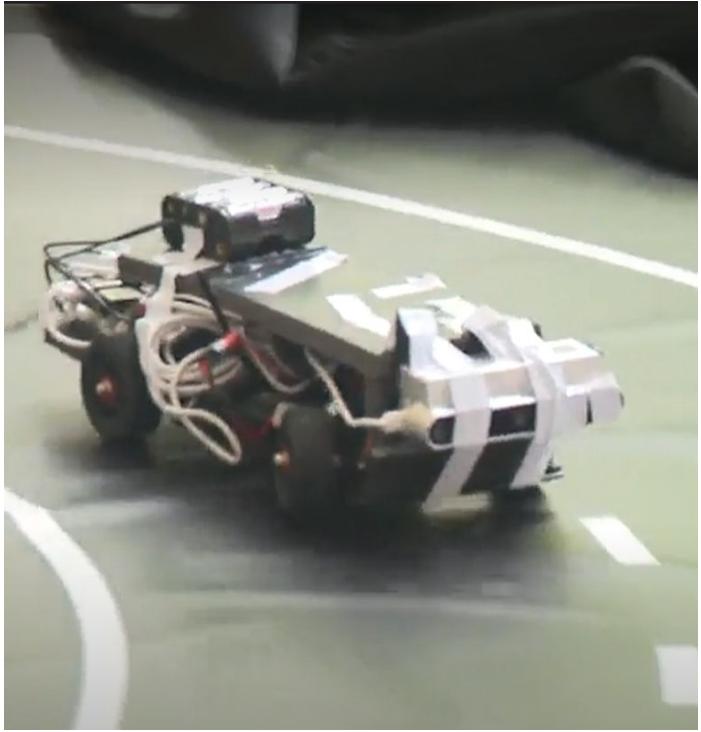
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on the video  
to view it

## FRC Robot 2024/2025

This robot was built in 2025 for the first robotics competition. I led development of the entire robot.

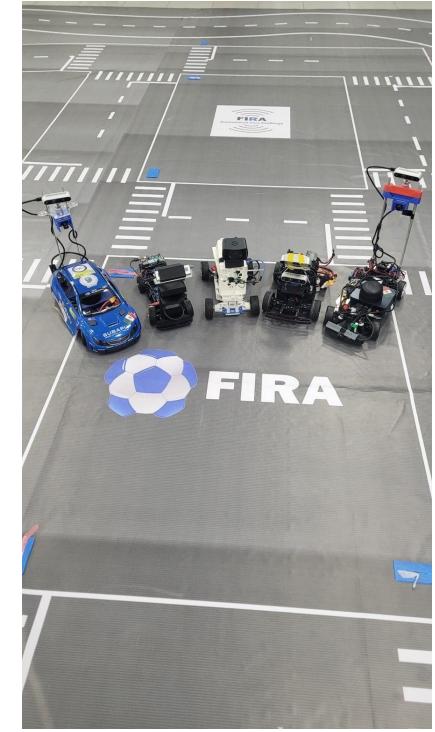
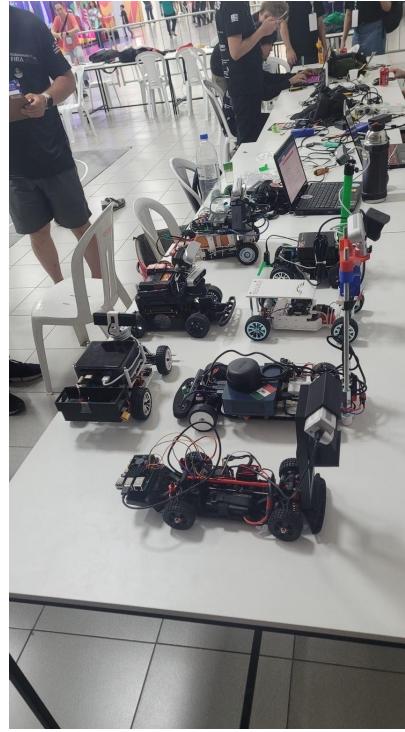
### Autonomous Routine

This is a video of the robot's autonomous routine. Full field Localization was done with April tag based Solve-PNP fused with wheel encoder data via a kalman filter. Movement was done by PID based path following. The paths were generated with bezier curves.



## FIRA Self Driving Car 2024

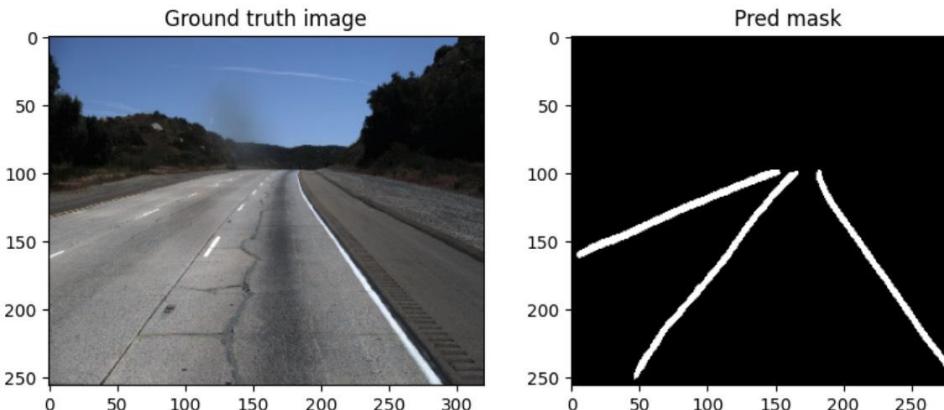
This robot was built in 2024 for the fira robocup, initially in 3 weeks but 2 months for the robot we took to brazil that won **2nd place globally**.



## World Championship Car

These are photos of the car developed for the world championship and eventually won 2nd.

## Mobile CNN Based Lane Detection



A clear, intuitive visualization of the CNN I developed for our self-driving car's road perception system. The left image shows the raw road camera input, and the right image shows the model's predicted lane segmentation mask (white = lane markings, black = background). The network uses a classic CNN encoder-decoder layout, with MobileNetV2 (B2 stage) providing lightweight feature extraction and a small segmentation head that upsamples those features to produce the final lane mask efficiently for real-time use on a Raspberry Pi 4B.

## Classification Report:

	precision	recall	f1-score	support
R64	1.00	0.22	0.36	9
R32	0.62	0.82	0.70	71
S16	0.29	0.29	0.29	35
E8	0.40	0.22	0.29	18
F4	0.00	0.00	0.00	9
2ND	0.00	0.00	0.00	4
Champ	0.00	0.00	0.00	2
accuracy			0.50	148
macro avg	0.33	0.22	0.23	148
weighted avg	0.48	0.50	0.46	148



## March Madness Predictor

A visualization of my March Madness prediction model, showing evaluation results for an ordinal neural network\*\* that predicts ordered tournament outcomes ( $R64 \rightarrow \text{Champion}$ ) from engineered efficiency metrics. The model learns \*\*round progression probabilities\*\* rather than discrete classes by predicting cumulative thresholds ( $P(Y \geq r)$ ), so performance is measured in ordinal distance instead of accuracy alone.

The model had A Mean Absolute Error of 0.72 which means the predicted finish is typically \*\*within one tournament round\*\* of the true result, indicating the model captures relative team strength and advancement likelihood while remaining limited by tournament randomness and class imbalance at deeper rounds.



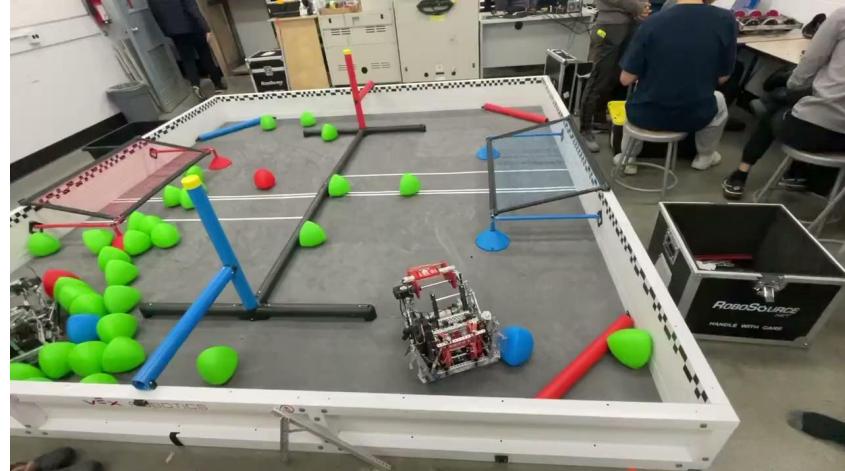
## FRC Robot 2023/2024

This robot was built in 2024 for the vex robotics competition. I played a supporting role in the development of this robot, that being said I still made major contributions.

Please click on the videos to view them



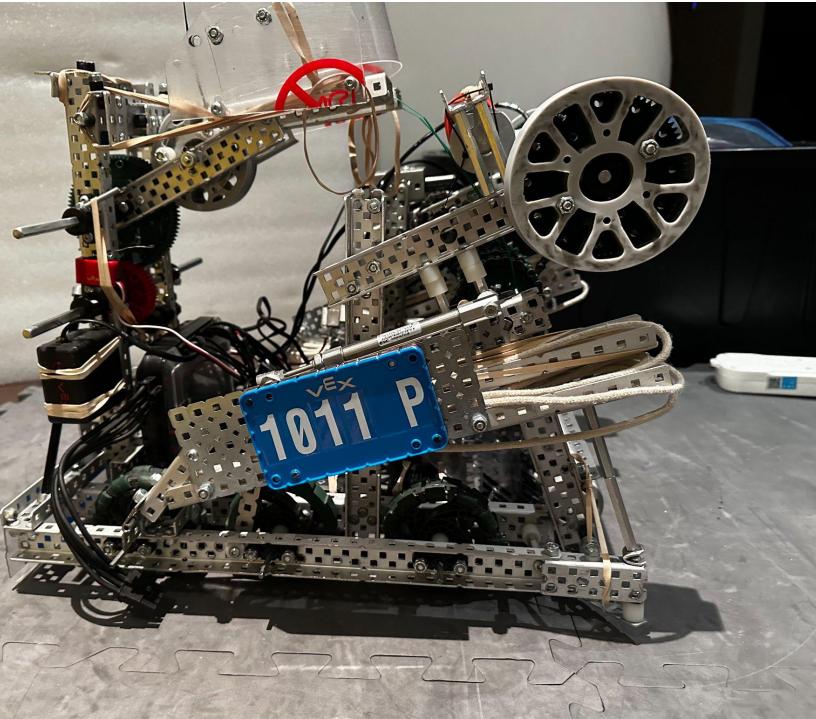
Please click on the videos to view them



## Vex Robotics 2022

This is a robot I designed and programmed myself for the vex robotics competition.

The robot had its own specialized wheel encoder based localization system and was able to autonomously navigate a given field smoothly using PID control, Pure pursuit path following and Bezier curve based path generation.



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## Vex Robotics 2021

This is a robot I designed and programmed myself for the vex robotics competition.