E1.07 - Talos

TEXAS STATE UNIVERSITY
Ingram School of Engineering

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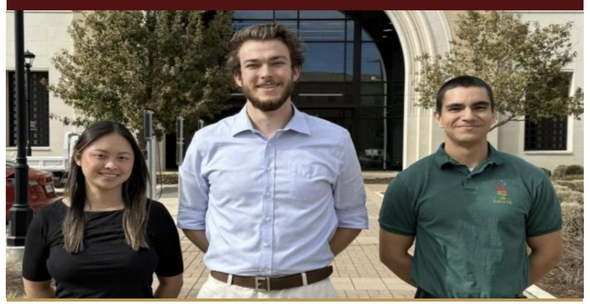
Sponsor: Jeff Stevens

Project Overview

Autonomous vehicle developed to safely navigate traffic lights, stop signs, and traffic in real time to complete a predetermined route

Meet the Team



Andrea Luke Arturo

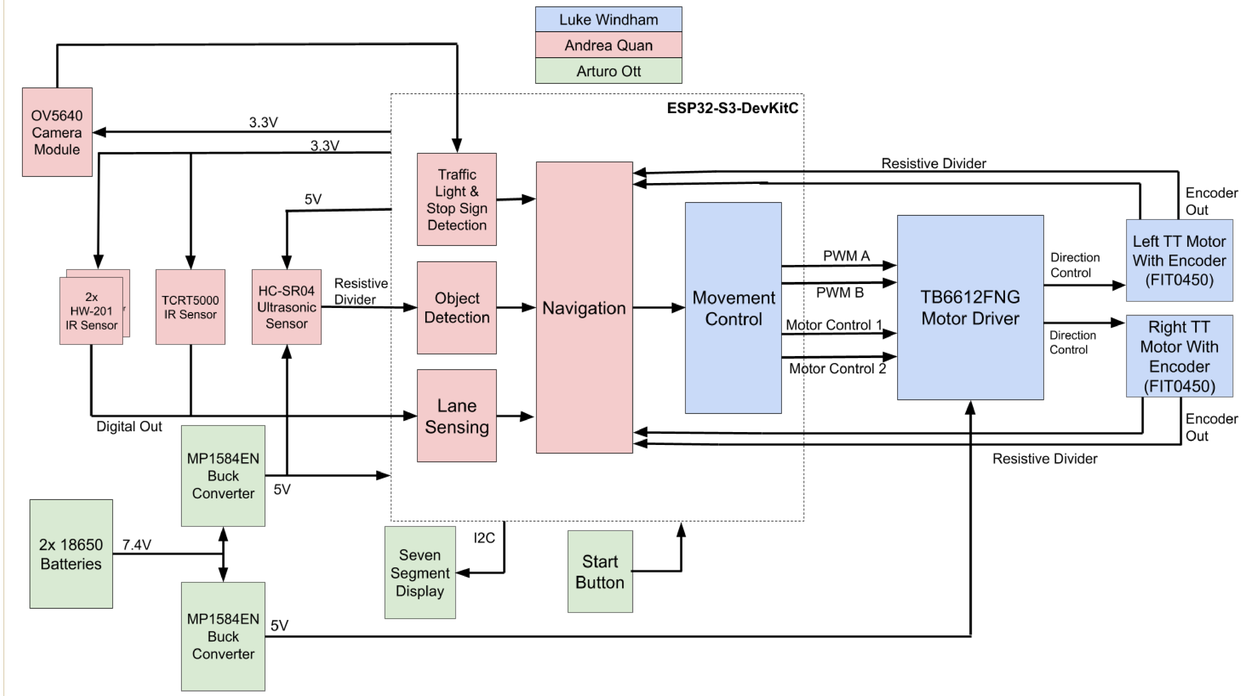
Design Requirements

- Autonomously navigate 4-way intersections
- Detect traffic lights, stop signs, other vehicles
- Stay within road lanes
- Budget: $100 + PCB cost
- Max size: 10cmx11cmx11cm
- Minimum 2-wheel system
- Start button with a 5 second count and timer display

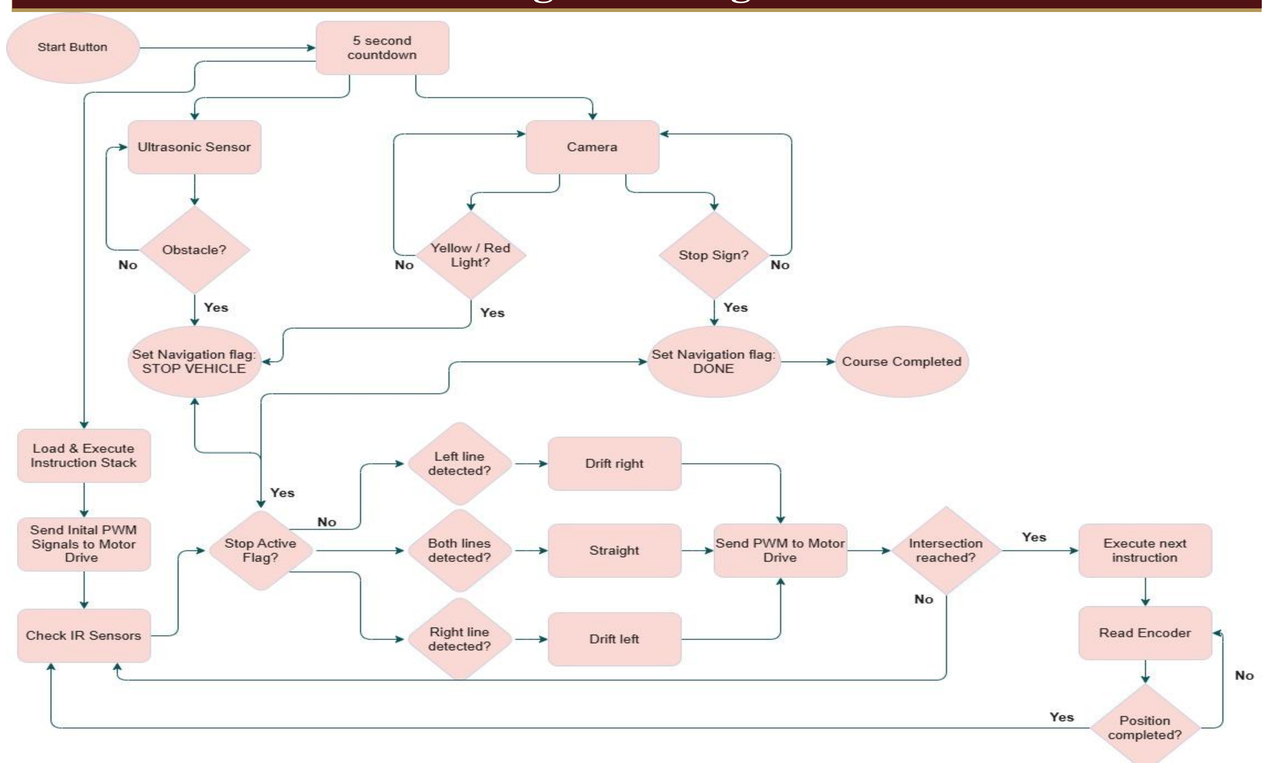
Acknowledgements

Sponsor: Mark Welker
Faculty Advisor: Jeff Stevens
D2 Mentors: Jade Maldonado, Zack Shannon, Edwin Paniagua

Top Level Diagram



Navigation Diagram



Design 1 Accomplishments

- Test chassis made, incorporating the motors, motor drive, encoders, and basic control code.
- Camera Identifies traffic lights and stop signs.
- PCB design complete

Cost & Budget

Total Budget: $100 + PCB

Part:	Quantity:	Cost:
Camera module	1	$14.95
Microcontroller	1	$15.88
Ultrasonic sensor	1	$1.30
IR sensors	3	$1.50
Motors with encoders	2	$14.80
Motor drive	1	$14.50
Tires/wheels	2	$5.00
Battery housing		$1.69
Batteries	3	$19.50
PCB	1	N/A
Fasteners	N/A	N/A
Total:		$89.12

Design 2 Goals

- Connect all subsystems onto the vehicle.
- Receive PCB chassis and install all hardware
- Test intersystem coordination.
- Integrate navigation with camera image processing.