NVIDIA/Cal Poly Robotics Teaching Kit with Jet

Module 1: Course Introduction

Lecture Slides

- **1.1** Course Introduction
- **1.2** Introduction to Robotics
- **1.3** Introduction to Jetson TK1/TX1
- **1.4** Jet Overview
- **1.5** Introduction to ROS

Labs

- **Lab 1**: Building the Robot
- **Lab 2**: Using ROS and Jet

Questions

- Student Version
- Answers

Module 2: Sensors and Actuators

Lecture Slides

- **2.1** Sonar, Accelerometer, and Gyroscope
- **2.2** Camera, Motors, and Encoders

Labs

- **Lab 3**: Sense and Avoid

Questions

- Student Version
- Answers

Module 3: Computer Vision

Lecture Slides

- **3.1** Introduction to Computer Vision
- **3.2** Image Filtering
- **3.3** Image Moments

Labs

- **Lab 4**: OpenCV Intro
- **Lab 5**: Object Tracking

Questions

- Student Version
- Answers

Module 4: Machine Learning

Module 5: Dead Reckoning

Module 6: Path Planning

Module 7: Robot Localization

Module 8: Control

Module 9: Obstacle Avoidance

Module 10: Final Project

- Harvester
- Capture-the-Flag