

# ENGR 3421: ROBOTICS I

## Into the Autonomous Ground Vehicle

Dr. Lin Zhang

Department of Physics and Astronomy  
University of Central Arkansas

August 24, 2021



# Outline

Review

Raspberry Pi



# Outline

Review

Raspberry Pi



# Safety

## Safe First!

Don't forget eyes and hands protection!

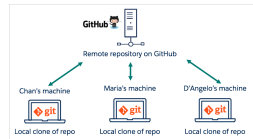
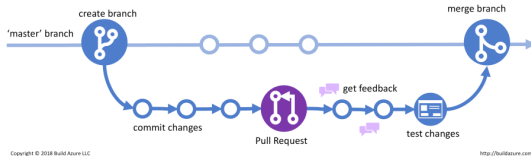
We have gloves and first aid kit now.



# Version Control

- Github provides hosting service.
- **Git** controls versions.

GitHub Flow



# Version Control

- Getting started [guides](#) and [Hello World](#).
- Alternatives:
  - [GitLab](#)
  - [Bitbucket](#)



# DC Motor

A DC motor is any of a class of rotary electrical motors that converts direct current electrical energy into mechanical energy.



- Simple.
- Low cost.
- High efficiency.
- No direction.
- Pair with reducer to achieve different behavior.
- Many applications: toys, ceiling fans, hydraulic pumps, electric cars/bikes, robots ...

A great explanation of [how does a DC motor works.](#)



Let's have a race!





# Outline

Review

Raspberry Pi



# Introduction to Raspberry Pi

The Raspberry Pi is a low cost, credit-card sized computer. It's capable of doing everything you'd expect a desktop computer to do.

Raspberry Pi has the ability to interact with the outside world, and has been used in a wide array of digital maker projects, from music machines and parent detectors to weather stations and tweeting birdhouses with infra-red cameras.

