

# ENGR 3421: ROBOTICS I

## Into the Autonomous Ground Vehicle

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# Outline

Review

Raspberry Pi



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# Safety

## Safe First!

Don't forget eyes and hands protection!

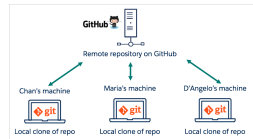
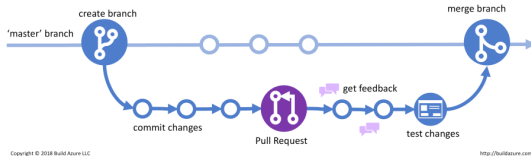
We have gloves and first aid kit now.



# 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!





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# 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 [package thief alarm](#) to [weather stations](#) and [tweeting birdhouses](#).
- Of course, there are many Raspberry Pi powered [robots](#)



# Get Started

- **Install** an operating system.
- Set up a controllable LED.

