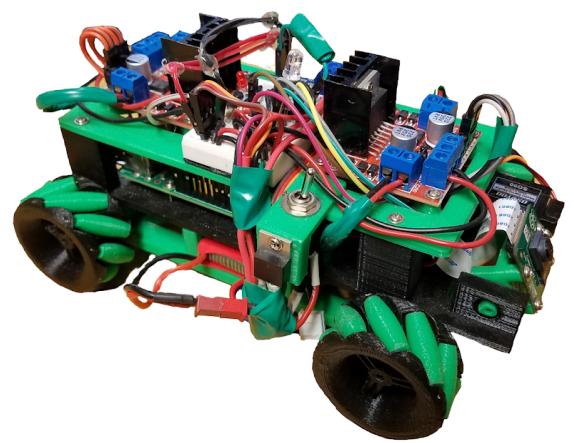


Project Board

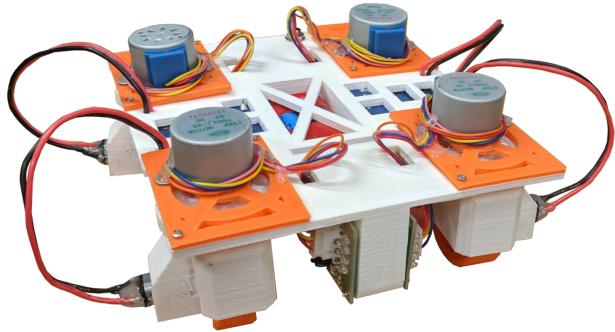
By Ryan McGee

MiniMcGee V1 - 2018

- Mecanum holonomic drive system
- Designed and assembled in Autodesk Inventor
- Programmed in Java, with Pi4J and OpenCV
- 3D Printed in PLA
- L298N motor drivers, N20 300RPM geared motors
- Powered by Raspberry Pi 3
- Controlled by bluetooth Xbox controller, or over WiFi with a Java Swing UI



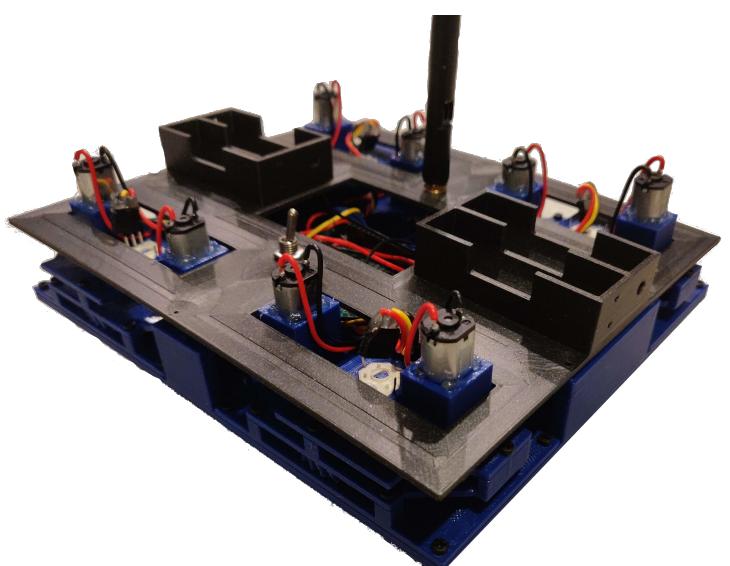
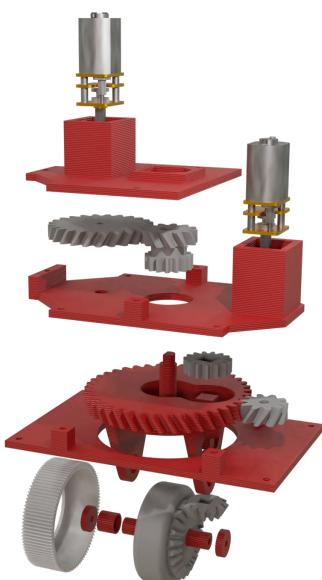
MiniMcGee V2 - 2019



- Pseudo-swerve drive system
- Designed and assembled in Autodesk Inventor
- Programmed in Java, forked from MiniMcGeeV1
- 3D Printed in PLA
- N20 300RPM geared motors, stepper motors
- Powered by Raspberry Pi Zero W
- Controlled by bluetooth Xbox controller, or over WiFi with a Java Swing UI

MiniMcGee V3 - 2021

- Fully continuous standard swerve drive system
- Designed and assembled in Autodesk Inventor, 3D printed in PETG
- Powered by ESP32 and programmed in C on FreeRTOS
- Uses continuous potentiometers and a 9-axis IMU over I2C
- Controlled over WiFi and Bluetooth, with a planned Android app



Project Board

By Ryan McGee

VEXU Swerve Drive - 2019-2021

- Prototyped in FreeCAD, Designed in Solidworks
- 3D Printed in PETG
- Adapted to use standard VEX Robotics parts
- Programmed in C++, with PID motion profiles
- Developed over 5 iterations



Robot Arms - 2017

- Designed in Autodesk Inventor
- Programmed in Arduino and Java
- Built with SG90 servos and stepper motors
- Controlled with analog joysticks or Xbox controller
- Communicates with host PC over Serial port

OpenCV Network Pipeline - 2016

- Programmed in Java, client and server side
- Built for offboard processing, to save processing power on a robot
- Contains a GUI for easier configuration of the pipeline
- Allows multiple pipelines, multithreaded

