

# The Module Tinkering Vehicle (MoTiV)

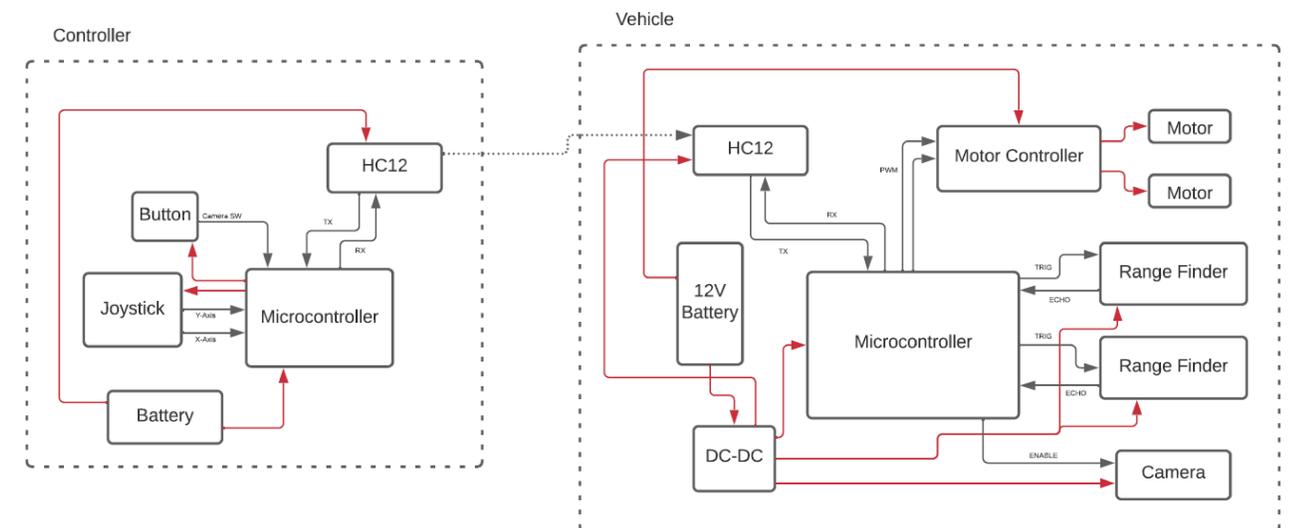
## Project

MoTiV is a remote-controlled car kit that a user can assemble and add additional components to as desired.

The goal for MoTiV is to provide an introduction to electronics that:

- Appeals to a diverse audience, both experienced and novice
- Limits frustration on the part of the learner by working reliably and consistently
- Allows for new functionality to be added as desired with a method for easily updating device software

## System



## Methods

- ARM microcontroller development boards and off the shelf electronics were used to develop MoTiV. Custom acrylic sheets were used to create the structure for the vehicle and controller.
- An ultrasonic range finding bumper and Wi-Fi camera were developed as optional modules that can be added to the basic system.
- The ARM microcontrollers were programmed using the C language. The software for the both the controller and vehicle are easily updated by use of a USB interface.
- To provide options for further development, several ports were left available on the ARM development board for additional modules and components to interface with.

## Conclusion

- With refinement, MoTiV would provide an excellent option for those seeking to dive further into electronics and embedded systems.
- Further research and development could be done with the ultrasonic range finding bumper to improve the self driving functionality.
- MoTiV could easily be added on by developing entirely new modules to be added to the system

