SafeRide 2.0 Documentation

Release 0.0.0a1

Ben Soroos

Jan 27, 2018

Contents:

1 Setting Up SafeRide 2.0 **1**
- 1.1 Parts for SafeRide 2.0 . . . 1
- 1.2 Software Setup for SafeRide 2.0 . . . 2
- 1.3 Assembly of SafeRide 2.0 . . . 2
- 1.4 Installation of SafeRide 2.0 . . . 2

2 Using SafeRide 2.0 **3**
- 2.1 Before a ride with SafeRide 2.0 . . . 3
- 2.2 On a ride with SafeRide 2.0 . . . 3
- 2.3 After a ride with SafeRide 2.0 . . . 3

CHAPTER 1

Setting Up SafeRide 2.0

1.1 Parts for SafeRide 2.0

1.1.1 Server

- Raspberry Pi 3 (https://www.raspberrypi.org/products/raspberry-pi-3-model-b/)
- Micro SD card - Best to choose a name-brand card, anything 8GB or more is fine
- Hard Drive - Any size, the bigger, the more video can be stored. External drives are easiest. Make sure you can connect it to USB.
- Case - Not essential, but highly reccomended. Pimoroni's PiBows(https://shop.pimoroni.com/collections/pibow) are good.
- USB hub - Any hub that can be externally powered should be fine.
- Micro USB cable - Choose a reliable one.

1.1.2 Front of Bike

- Raspberry Pi Zero W (https://www.raspberrypi.org/products/raspberry-pi-zero-w/)
- Micro SD card - Best to choose a name-brand card. You'll need a 32GB or greater one.
- Raspberry Pi Camera (https://www.raspberrypi.org/products/camera-module-v2/)
- Raspberry Pi Zero Camera adaptor
- Arduino Pro Mini
- 2 NO pushbuttons, one with LED
- 2 Micro USB cables, preferably long
- FrontPi PCB(https://upverter.com/bluepython508/e1da89fd227b3490/SafeRide20-Front/)
- 40 pin sheathed female header

- Male header pins
- 3D Printed case

1.1.3 Rear of Bike

- Raspberry Pi Zero W (https://www.raspberrypi.org/products/raspberry-pi-zero-w/)
- Micro SD card - Best to choose a name-brand card. You'll need a 32GB or greater one.
- Raspberry Pi Camera (https://www.raspberrypi.org/products/camera-module-v2/)
- Raspberry Pi Zero Camera adaptor
- Arduino Pro Mini
- IR rangefinder with 1.5m within range.
- RearPi PCB(https://upverter.com/bluepython508/95a3c5453e5a6f22/SafeRide20-Rear/)
- 40 pin sheathed female header
- Male header pins
- 3D Printed case

1.1.4 Miscellaneous

- Spools of stranded wire - 3 colours is best.
- Solder

1.1.5 Tools

- Wire Cutters
- Wire Strippers
- Soldering Iron

1.2 Software Setup for SafeRide 2.0

1.3 Assembly of SafeRide 2.0

1.4 Installation of SafeRide 2.0

CHAPTER 2

Using SafeRide 2.0

2.1 Before a ride with SafeRide 2.0

2.2 On a ride with SafeRide 2.0

2.3 After a ride with SafeRide 2.0