**Inspection**

* Project scope – fitting in with past work
* Demo:
* Kart response to checkerboard
* Test GUI Control
* System overview – 5 CANBus boards
* My contribution – getting system onto kart and getting kart moving
* Future work

**Future work**

* Design a new set of CANBus boards – too many errors on current ones
  + Use different connectors – not small molex
  + Use SAM4 or similar – SAM7 deprecated
  + Make PWM board SPI more robust, or use alternative
  + Include debugging LEDs
  + Power speed sensor from auxiliary power (12V)
  + Better board casings
* Interface with new PWM motor control boards (being designed by postgrads)
* Include wireless/bluetooth link so laptop not required on board
* Extend autonomous navigation
* Add in environment sensors e.g.: IR, Sonar, Lydar
* Add in safety considerations on board-laptop communications

**Work done this year…**

**Hardware**

* New brake actuator
* Connectors and wiring
* PWM board modifications
* Fit actuators to go-kart
* Integrate CANBus system onto go-kart

**Software**

* Set up linux/openocd/gcc toolchain/Atmel Studio etc
* Update PWM board code to meet new requirements and toolchain standards
* Python Test Gui
* Python interface between go-kart API and C++ computer vision algorithm

**System Integration**

* Brake, steering calibration
* Speed sensor calibration
* SPI to motor duty cycle calibration
* Ensuring PWM board maintains motor current and duty considerations
* Proportional speed control
* Debugging error states
* Fixing grounding errors
* Debugging CANBus timing errors
* Fixing current supply issues