# Software for UUV Project

### Operator Laptop (Python)

* Operator interface
  + Read input from controller, send controller input to Raspberry Pi
  + Command terminal to send commands directly to UUV
  + Display video feed
  + Display sensor data onscreen

### Raspberry Pi (Python)

* Main program
  + Call functions from sub-programs as needed
* Operator communication interface
  + Connect to operator interface program
  + Receive controller input from operator computer
  + Receive commands from operator computer
  + Send sensor data to operator computer
* Vector calculations
  + Turn controller input into motor speed values
* Video stream
  + Read video from camera
  + Send video to operator computer
* Arduino serial communication interface
  + Send commands (motor speeds, servo angles, etc) to Arduino
  + Receive sensor data from Arduino

### Arduino (C++)

* Main program
  + Call functions from sub-programs as needed
* Motor control program