Initial Timeline

Report Overall Deadline: Sunday, May 19
Presentation: Tuesday, May 14

Internal Deadlines:

Build Gimbal	(4/22)
Person Detection	(4/22)
Motor Control	(4/22)
Track Person	(4/29)

(Optional): Train on Individual Person

Track Person

I) Build Gimbal:
   1) Finalize materials   (4/4)
      a) Camera
      b) Motor
      c) Motor Driver
   2) Design Mount for camera   (4/8)
   3) Print   (4/15)
   4) Motor Control
      a) Demonstrate control of central location   (4/22)

II) Person Detection
   1) OpenCV Library Verification via Webcam   (4/15)
   2) Demonstrate on PI   (4/22)

III) Implement Tracking
   1) Verify 1 person can be tracked by camera   (4/29)
   2) (optional) Verify multiple person tracking
   3) (optional) Verify distinction of individuals

Actual Timeline

I) Build Gimbal:
   1) Finalize materials   (4/4)
      a) Camera
      b) Motor
      c) Motor Driver
   2) Design Mount for camera   (4/16)
   3) Print   (4/18)
   4) Assemble with initial servos   (4/20)
   5) Assemble with new gimbal and different servos   (5/7)

II) HOG Detection
   1) Verification of HOG via still images   (4/16)
   2) Verification of HOG on Raspberry Pi   (4/30)

III) Motion tracking

1) KCF tracking via Raspberry Pi   (4/30)
   2) MOSSE tracking via Raspberry Pi   (4/30)
IV) Servo control
   1) Initial servo functionality (set angle/PWM)   (4/30)
   2) PID Control Loop No tuning   (4/30)
   3) PID Control Loop Initial Heuristic Tuning   (5/7)
V)   Test and Integration
   1) Integrate servo controls and MOSSE tracking   (5/4)
   2) Update servo control coefficients using Ziegler Nichols   (5/9)
   3) Integrate HOG identification with MOSSE tracking   (5/9)
   4) Fix servo control instability   (5/11)
   5) Finalize control coefficients   (5/12)
VI)   Documentation
   1) Record working demonstration of project   (5/13)
   2) Finish final presentation   (5/13)
   3) Present   (5/14)
   4) Finish final documentation and report   (5/19)

Major delays in development were mostly due to bugs we needed to troubleshoot and difficulties setting up the proper development environments for working on the project, in addition to complications with broken servos and a high performing 3D printed gimbal.