299r Rotation: Harvard Biorobotics Lab
Spring 2018

Force Estimation with Inertial Measurement Units and with Applications of Machine Learning

Milestones

Week starting on Monday

1. **12 Feb**
   1D – Literature search, setup, collect preliminary data for F = kx (1st order model), in one axis of reflection (no twist of finger – directly up and down)
2. **19 Feb**
   1D – Analyze data, improve with machine learning
3. **26 Feb**
   3D – Collect off-axis deflection data (with twist). Test assumptions of linearity – A. Fix spot and change force, see if deflection angle changes B. Change spot, given same force, how much does the finger deflect at different points along the finger?
4. **05 Mar**
   3D – Collect data and analyze (with lower order model, then higher model with machine learning)
5. **12 Mar**
   3D – Analyze and write up conclusions
6. **19 Mar**
   Tendon – Setup for tendon measurements, where finger is curled
7. **26 Mar**
   Tendon – Collect tendon data
8. **02 Apr**
   Tendon – Analyze data, iterate on machine learning
9. **09 Apr**
   Tendon – continue analysis
10. **16 Apr**
    Spacer week
11. **23 Apr**
    Writeup
12. **Monday, 30 April 2018**
    Group presentation