

Andrew Hill

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Education

University of Washington, Seattle

B.S. in Bioengineering with College Honors (2012)

3.79 Departmental GPA; 3.69 Overall GPA

Research Experience

MacArthur Lab of MGH and the Broad Institute of Harvard and MIT

9/2013 – Present

Volunteer Research Assistant

- Wrote python script to extract/refine data from Leiden muscular dystrophy variant databases.
- Mapped HVGS variant coordinates to genomic coordinates and validated results via annotation.

Tekscan, Inc.

9/2012 - Present

Applications Engineer

- Conducting engineering research projects for new applications of force and pressure sensors.
 - Implementing machine learning algorithms to estimate shoe-size from pressure sensor data.
 - Signal processing and data analysis for IMU position/angle tracking of human gait.
 - Greatly improved algorithms for gait-analysis from Tekscan pressure sensor data.
- Developing automated test fixtures and data-analysis scripts with MATLAB and LabVIEW.
- Providing engineering support and/or training to customers and all internal departments.

UW Biorobotics Lab (Professors Hannaford and Chizeck)

1/2010 – 6/2012

Undergraduate Research Assistant

- Thesis: Online Modeling of the *In Vivo* Mechanical Properties of Soft Tissue for Robotic Surgery
 - Designed, built, and programmed electromechanical device to quantify in vivo tissue dynamics.
 - Developed Unscented Kalman Filter/signal processing using MATLAB/C++.
- Co-developed hardware and microcontroller code for haptic-enabled glove.
- Developed hardware and microcontroller code to detect peg-contact in FLS block-transfer task.

Professor Joan Sanders Lab

8/2009 – 1/2010

Undergraduate Research Assistant

- Collected/analyzed data to calibrate tri-axis force sensor for amputee gait analysis.
- Designed and built Plexiglas housing for patient-mounted electronics.

Selected Coursework

Probability and Statistics

Organic Chemistry

Biochemistry

Embedded Microcomputer Systems

Computer Science I&II

Signal Processing

Independent Coursework

- Machine Learning
- Algorithms Design and Analysis – Part 1
- Circuits and Electronics
- Manual Machining and Layout (Mill and Lathe)

Coursera (Stanford)
Coursera (Stanford)
MIT Open Courseware
Artisan's Asylum

Skills

- **Computing:** Java, Python, MATLAB, C#, C/C++, LabVIEW
- **Web Development:** HTML, CSS, JavaScript
- **Software Development Tools:** Git, Mercurial, Eclipse, Visual Studio
- **Operating Systems:** Windows and UNIX-based operating systems
- **Embedded Systems:** Familiar with ARM and Arduino embedded system programming
- **Machining:** CNC mill, lathe, band-saw, drill-press, various hand tools

Coaching and Teaching Experience

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| iD Tech Camps <i>Summer Camp Instructor: Programming in Java and Adventures in Robotics</i> | Summer 2012 |
| UW Bioengineering Department Circuitry Workshops <i>Volunteer Instructor</i> | Winter 2012 |
| UW Bioengineering Outreach Program <i>Ultrasound Education Module Co-Developer and Instructor</i> | 1/2011 – 6/2012 |
| United States Gymnastics Training Camps <i>Senior Counselor and Coach</i> | Summers 2007 – 2010 |

Leadership Experience and Activities

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| Dana-Farber Cancer Institute, Brigham and Women's Hospital <i>Volunteer – Kraft Family Blood Donor Center</i> | 9/2012 – 4/2013 |
| UW Biomedical Engineering Society <i>Vice President and Webmaster</i> | 6/2011 – 6/2012 |
| UW Honors Department <i>Peer Mentor</i> | 09/2008 – 9/2009 |
| Washington Men's Gymnastics Team <i>Team Member</i> | 8/2008 – 10/2009 |

Selected Awards and Honors

- Mary Gates Research Scholarship
- Annual Dean's List
- USA Gymnastics Men's Program Scholarship
- Friends of Gymnastics Scholarship

Presentations

- (Oral/Demo) Tekscan North American Distributor Meeting
- (Oral) 2012 UW Undergraduate Research Symposium

Study Abroad

- Creative Travel Writing and Sustainability in Ecuador