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 — Coursera (Stanford)
- Algorithms Design and Analysis – Part 1 — Coursera (Stanford)
- Circuits and Electronics — MIT Open Courseware
- Manual Machining and Layout (Mill and Lathe) — 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

iD Tech Camps Summer 2012
Summer Camp Instructor: Programming in Java and Adventures in Robotics

UW Bioengineering Department Circuitry Workshops Winter 2012
Volunteer Instructor

UW Bioengineering Outreach Program 1/2011 – 6/2012
Ultrasound Education Module Co-Developer and Instructor

United States Gymnastics Training Camps Summers 2007 – 2010
Senior Counselor and Coach

Leadership Experience and Activities

Dana-Farber Cancer Institute, Brigham and Women's Hospital 9/2012 – 4/2013
Volunteer – Kraft Family Blood Donor Center

UW Biomedical Engineering Society 6/2011 – 6/2012
Vice President and Webmaster

UW Honors Department 09/2008 – 9/2009
Peer Mentor

Washington Men's Gymnastics Team 8/2008 – 10/2009
Team Member

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