

FAIZAN HAQUE

Research Engineer, human-computer interaction

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Publications

Faizan Haque, Mathieu Nancel, and Daniel Vogel. 2015. Myopoint: Pointing and clicking using forearm mounted electromyography and inertial motion sensors. In Proceedings of the 33rd Annual ACM Conference on Human Factors in Computing Systems (CHI '15). ACM, 3653–3656.

Experience

Sept 2015 – Sept 2016
Waterloo, Canada

Thalmic Labs
Research Engineer

- Collaborated with PM, design, engineering, and leadership teams to drive UX research for novel wearable devices
- Led user testing efforts company wide, introducing protocols and methods
- Prototyped algorithms for interaction experiments (sensors, input devices)
- Worked in Python (SciPy, iPython, scikitlearn), Java(Processing)

May – Aug 2014
Waterloo, Canada

Thalmic Labs
Software Engineer (intern)

- Developed interaction technique fusing IMU and EMG sensors to allow for accurate control of distant displays using the Myo armband
- Shipped algorithm as *presentation mode* feature
- Worked in Python(SciPy), C++ (Openframeworks), Matlab

Sept 2013 – Apr 2014
Waterloo, Canada

University of Waterloo, Human-Computer Interface Lab
Undergraduate Researcher (intern)

- Designed interaction techniques for freehand pointing and target selection on large scale displays using EMG armbands
- Published technique in peer reviewed publication
- Worked in Python(SciPy), C++ (Openframeworks)

Jan – Apr 2013
Waterloo, Canada

University of Waterloo, Collaborative Systems Lab
Research Assistant (intern)

- Designed large format touch + pen input tabletop as testing platform for researchers
- Explored FTIR/DI methods for efficient multi-touch detection using consumer hardware

May – Aug 2012
Toronto, Canada

University of Toronto, Dynamic Graphics Project Lab
Research Assistant (intern)

- Designed a multi-device interaction framework that enables applications to span multiple devices in real time, including the use of inter-device gestures
- Worked in Javascript (Node.js, Meteor.js)

Jan – Apr 2012
Toulouse, France

École Nationale de l'Aviation Civile, Interactive Computing Lab
Research Assistant (intern)

- Selected to participate in **LEIF** undergraduate research exchange
- Integrated multi-touch detection into a tangible–UI air traffic control terminal
- Ported image processing subsystem to OpenCV, substantially reducing CPU load
- Worked in C++ (OpenCV, touchlib, CUDA), C#

Projects

Sept 2014 – Apr 2015

Finger Flexion Classification using Consumer Electromyography (Group, capstone undergraduate project)

- Explored machine learning techniques (shallow/deep neural networks) to allow consumer-level EMG sensors to detect and classify simultaneous finger flexion and extension

Jan – Apr 2014

Proxima (Group, product design course)

- Developed a wearable device to facilitate rapid data transfer between devices using a gestural interface

May – Aug 2013

Microbat (Group, product design course)

- Designed a wearable, sonar-based obstacle detection system to aid in navigation tasks among the visually impaired

Education

Apr 2016

University of Waterloo

BASc. in Honours Systems Design Engineering, Co-op program

- Concentration in Cognitive Science

Relevant Courses

- Human Factors in Design
- Probability and Statistics for Engineers
- Cognitive Ergonomics
- Sampling and Experimental Design
- Introduction to Cognitive Science
- Computational Neuroscience
- Biomedical Measurement and Signal Processing
- Introduction to Pattern Recognition

Awards & Honours

Feb 2014

Google Lime Scholarship – \$5000

- Finalist

Jan 2013

University of Waterloo Undergraduate Research Internship award – \$1000

- Based on research potential and academic merit

Jan 2012

LEIF Transatlantic Exchange Partnership Project award – \$7400

- For research potential in support of LEIF research exchange

Sept 2009

University of Waterloo Merit Scholarship – \$1000

- Based on academic merit