

## EDUCATION

### HARVARD UNIVERSITY

PHD STUDENT IN COMPUTER SCIENCE

Advisor: Prof. Radhika Nagpal

Cambridge, MA

2016 – present

### IMPERIAL COLLEGE LONDON

MASTER OF RESEARCH IN BIOENGINEERING, WITH DISTINCTION

Advisors: Prof. Etienne Burdet, Dr. Ildar Farkhatdinov

Thesis: *Assisting Balance Recovery with a Lower Limb Exoskeleton*

London, UK

2016

### NORTHEASTERN UNIVERSITY

BS IN BEHAVIORAL NEUROSCIENCE

MINOR IN COMPUTER SCIENCE

GPA: 3.98 / 4.0, summa cum laude

Honors Thesis: *Asymmetric Learning in an Asymmetric Bimanual Task*

Boston, MA

2015

## SCHOLARSHIPS, GRANTS, AND AWARDS

### NATIONAL

2016 Department of Energy Computational Science  
Graduate Fellowship (DOE CSGF)

2016 Hertz Fellowship Finalist

2016 NSF Graduate Research Fellowship Program (GRFP)  
Honorable Mention

2015 Marshall Scholar

2014 Rhodes, Fulbright, and Mitchell Scholarship Finalist

2013 Goldwater Scholarship

2013 DAAD Undergraduate Scholarship

### NORTHEASTERN UNIVERSITY

2015 University Honors Program Distinction

2015 Honors in the Discipline (Honors thesis)

2015 Alex Skavenski Award for Behavioral Neuroscience

2015 Sears B. Condit Award for academic achievement

2015 Dean's List (6 semesters)

2014 Provost Undergraduate Advanced Research Award

2013 Provost Undergraduate Research Award

2013 Presidential Global Scholarship

2010 National Merit Scholarship

## RESEARCH EXPERIENCE

### IMPERIAL COLLEGE HUMAN ROBOTICS GROUP

RESEARCH STUDENT

Advisors: Prof. Etienne Burdet, Dr. Ildar Farkhatdinov

- Develop cooperative human-computer control for balance recovery in a lower limb robotic exoskeleton and assess its effectiveness
- Create Simulink model for designing and evaluating controllers

London, UK

September 2015 – August 2016

### NORTHEASTERN UNIVERSITY ACTION LAB

RESEARCH ASSISTANT

RESEARCH CO-OP

Advisor: Prof. Dagmar Sternad

- Collected data from human participants in motor control experiments, including electroencephalogram (EEG)
- Designed and programmed data collection protocols and analysis tools in C++ (on the HapticMaster robotic manipulandum), Matlab, and Psychtoolbox
- Participated in and presented at lab meetings on movement neuroscience

Boston, MA

September 2011 – August 2015

July – December 2012; September – December 2014

#### Projects

- Prediction and stability in control of objects with complex dynamics
- Learning and long-term retention of an asymmetric bimanual task (Honors thesis; manuscript in preparation)
- Effects of central fatigue on cognitive and motor performance

## NORTHEASTERN UNIVERSITY MARINE SCIENCE CENTER

### RESEARCH ASSISTANT

Advisor: Prof. Joseph Ayers

- Programmed network of electronic neurons in LabView to control rheotaxis in a biomimetic robotic lobster
- Designed and built bend-sensing antennae for RoboLobster
- Created circuits and Arduino programming for bend sensation and antennae control

Nahant, MA  
May – August 2015

## MAX PLANCK INSTITUTE FOR INTELLIGENT SYSTEMS

### RESEARCH CO-OP

Advisor: Prof. Stefan Schaal, Director of Max Planck Institute

- Designed and developed experiments for the CyberGlove data glove
- Collaborated with a post-doctoral researcher to develop reinforcement learning models of a novel motor skill task
- Collected pilot behavioral data from human subjects
- Attended seminars and lab meetings on robotics and machine learning

Tübingen, Germany  
July – December 2013

## CONFERENCES AND PRESENTATIONS

**Ebert J**, Farkhatdinov I, van Oort G, van Asseldonk E, & Burdet E. *Preliminary Study on Assisting Balance Recovery with Lower Limb Exoskeleton*. Work in progress paper and poster presented at: EuroHaptics 2016; 2016 July 4–7; London, UK.

Sternad D, Mukovskiy A, **Ebert J**, & Dijkstra T. *Dynamic Stability in the Control of Complex Objects*. Poster at: Biomechanics and Neural Control of Movement 2016; 2016 June 12–17; Mt. Sterling, OH.

**Ebert J**, Park S, & Sternad D. *Asymmetric Learning in an Asymmetric Bimanual Task*. Poster presented at: Society for the Neural Control of Movement 25th Annual Meeting; 2015 April 20–24; Charleston, SC.

**Ebert J**, Mukovskiy A, Dijkstra T, & Sternad D. *Why You Don't Spill Your Coffee*. Poster presented at: Northeastern University Research, Innovation, and Scholarship Expo (RISE); 2015 April 9; Boston, MA.

**Ebert J**, Kim S, Sternad D, & Schaal S. *Learning and exploration in a novel dimensionality-reduction task*. Poster presented at: Society for the Neural Control of Movement 24th Annual Meeting; 2014 April 20–25; Amsterdam, NL.

**Ebert J**, Park S, & Sternad D. *Asymmetric Learning in an Asymmetric Bimanual Task*. Poster presented at: Northeastern University Research, Innovation, and Scholarship Expo (RISE); 2014 April 10; Boston, MA.

**Ebert J**, Park S, & Sternad D. *Asymmetric Learning in an Asymmetric Bimanual Task*. Poster presented at: Northeast Undergraduate Research and Development Symposium; 2013 March 2–3; Biddeford, ME.

**Ebert J**, Park S, Griffin L, O'Neil-Pirozzi T, & Sternad D. *Central Fatigue in Cognitive and Motor Performance*. Poster presented at: Northeastern University Research, Innovation, and Scholarship Expo (RISE); 2012 March 29; Boston, MA.

## TEACHING EXPERIENCE

### NORTHEASTERN DEPARTMENT OF COMPUTER SCIENCE

#### TEACHING ASSISTANT

- Taught two weekly lab courses of 30–40 students each
- Graded student exams and quizzes
- Held twice-weekly office hours to assist students with course material

Boston, MA  
September 2014 – April 2015

#### TUTOR

- Assisted college students in weekly introductory computer science labs
- Graded weekly student programming assignments
- Tutored students in course material at office hours

September 2012 – April 2014

## **PROACTIVE RECRUITMENT IN SCIENCE AND MATHEMATICS (PRISM)**

### **UNDERGRADUATE MENTOR**

Boston, MA  
July 2011 – April 2013

- Planned and organized programming throughout the academic year for first and second year college students interested in mathematics and science
- Facilitated collaboration and discussion among participants in problem solving activities and problem sets
- Guided students in designing and implementing independent research projects

## **OTHER EXPERIENCE**

### **INTERACTIVE MOTION TECHNOLOGIES**

#### **SOFTWARE DEVELOPMENT CO-OP**

Watertown, MA  
July – September 2014

- Designed specifications for stroke evaluation software with input from clinicians, researchers, and software developers
- Developed software to store and automate clinician stroke evaluations with an HTML5 and JavaScript front end and a Django and SQL back end

## **COMMUNITY SERVICE**

### **NORTHEASTERN UNIVERSITY**

#### **CIVIC ENGAGEMENT PROGRAM**

Boston, MA  
September 2010 – May 2015

- Committed to at least 100 hours of community service annually
- Participated in service events such as Relay for Life and food sorting at the Greater Boston Food Bank

### **VOLUNTEER ACTIVITIES**

Boston Bikes volunteer

2014–2015

Tutor team leader at TechBoston Academy

2014

Brigham and Women's Hospital: Medical Career Exploration Program volunteer

2011–2013

Massachusetts General Hospital: Youth Program mentor

2010–2011

## **SKILLS**

### **PROGRAMMING & SOFTWARE**

Python (including Django, NumPy, SciPy, Matplotlib) • MATLAB • Simulink • Java • Arduino • LabView • JavaScript • HTML/CSS •  $\text{\LaTeX}$  • C++ • Database design • Linux

### **LABORATORY**

3D motion capture • Kinematic and EEG data collection in human subjects • Basic signal processing (filtering, frequency domain analysis)

### **LANGUAGES**

Fluent in English and German