

EDUCATION

Harvard University PhD candidate in Computer Science Advisor: Prof. Radhika Nagpal	2016 –
Imperial College London Master of Research in Bioengineering, with Distinction Advisors: Prof. Etienne Burdet, Dr. Ildar Farkhatdinov Thesis: <i>Assisting Balance Recovery with a Lower Limb Exoskeleton</i>	2016
Northeastern University BS in Behavioral Neuroscience, Minor in Computer Science GPA: 3.98 / 4.0, summa cum laude Honors Thesis: <i>Asymmetric Learning in an Asymmetric Bimanual Task</i>	2015

RESEARCH

Harvard Self-Organizing Systems Research Group Prof. Radhika Nagpal LARVAbot: Locomotion of autonomous robots via aggregation Multi-feature perception and decision making in robot collectives	2017 – 2016 –
Lawrence Livermore National Laboratory Dr. Michael Schneider Multi-telescope image integration for efficient geosynchronous orbit estimation	May – August 2018
Imperial College Human Robotics Group Prof. Etienne Burdet, Dr. Ildar Farkhatdinov Co-control of balance recovery in a lower limb exoskeleton	2015 – 2016
Northeastern University Action Lab Prof. Dagmar Sternad Prediction and stability in control of objects with complex dynamics Learning and long-term retention of an asymmetric bimanual task Effects of central fatigue on cognitive and motor performance	2014 – 2015 2012 – 2015 2011 – 2012
Northeastern University Marine Science Center Prof. Joseph Ayers Neuro-inspired rheotaxis and antenna design in a robotic lobster	May – August 2015
Interactive Motion Technologies Integrated stroke assessment software in rehabilitation robotics	July – September 2014
Max Planck Institute for Intelligent Systems Prof. Stefan Schaal Learning and exploration in a novel dimensionality-reduction task	July – December 2013

GRANTS AND SCHOLARSHIPS

Department of Energy Computational Science Graduate Fellowship (DOE CSGF)	2016
Marshall Scholarship	2015
Northeastern Provost Undergraduate Advanced Research Award	2014
Barry M. Goldwater Scholarship	2013
Northeastern Provost Undergraduate Research Award	2013
DAAD Undergraduate Scholarship	2013
Northeastern Presidential Global Scholarship	2013
Northeastern National Merit Scholarship	2010

AWARDS

Hertz Fellowship Finalist	2016
National Science Foundation Graduate Research Fellowship Program (NSF GRFP) Honorable Mention	2016
Northeastern University Honors Program Distinction	2015
Northeastern Honors in the Behavioral Neuroscience	2015
Northeastern Alex Skavenski Award for Behavioral Neuroscience	2015
Northeastern Sears B. Condit Award for academic achievement	2015
Northeastern Dean's List (6 semesters)	2010 – 2015
Rhodes, Fulbright, and Mitchell Scholarship Finalist	2015

PUBLICATIONS

- J. T. Ebert**, M. Gauci, and R. Nagpal. 2018. Multi-Feature Collective Decision Making in Robot Swarms. In *Proc. of the 17th Conference on Autonomous Agents and Multiagent Systems (AAMAS 2018)*, Stockholm, Sweden, July 10–15, 2018, IFAAMAS.
- S. Bazzi, **J. Ebert**, N. Hogan, and D. Sternad. 2018. Stability and Predictability in Dynamically Complex Physical Interactions. In *Proc. of the 2018 IEEE International Conference on Robotics and Automation (ICRA 2018)*, Brisbane, Australia, May 21–25, 2018.
- [Submitted] S. Bazzi, **J. Ebert**, N. Hogan, and D. Sternad. Stability Analysis of Human Movement: Contraction Theory as a New Tool. *Chaos*.
- [Submitted] I. Farkhatdinov, **J. Ebert**, G. van Oort, E. van Asseldonk, and E. Burdet. Experiments on Human Balancing Co-Control in Standing. *IEEE RA-L*.
- [In preparation] S. Park, **J. Ebert**, and D. Sternad. Asymmetric Learning in an Asymmetric Bimanual Task.

CONFERENCE ABSTRACTS AND POSTERS

- J. Ebert**, M. Gauci, and R. Nagpal, "Multi-Feature Collective Decision Making in Robot Swarms." Poster at: *DOE CSGF Program Review*; 15–19 July 2018; Washington, DC.
- J. Ebert**, C. Teeple, E. Steinhardt, and S. Ramanathan, "Infotaxis in a Multi-agent Sensor Network." Poster at: *DOE CSGF Program Review*; 24–27 July 2017; Washington, DC.
- I. Farkhatdinov, **J. Ebert**, G. van Oort, E. van Asseldonk, and E. Burdet, "Human Balance Augmentation with Lower Limb Exoskeleton Robot." Extended abstract and poster at: *RehabWeek 2017 workshop: Towards a next generation of wearable robotic devices for human-oriented assistance and therapy*; 17 July 2017; London, UK.
- J. Ebert**, I. Farkhatdinov, G. van Oort, E. van Asseldonk, and E. Burdet, "Preliminary Study on Assisting Balance Recovery with Lower Limb Exoskeleton." Work in progress paper and poster at: *EuroHaptics 2016*; 4–7 July 2016; London, UK.
- D. Sternad, A. Mukovskiy, **J. Ebert**, and T. Dijkstra, "Dynamic Stability in the Control of Complex Objects." Poster at: *Biomechanics and Neural Control of Movement 2016*; 12–17 June 2016; Mt. Sterling, OH.
- J. Ebert**, S. Park, and D. Sternad, "Asymmetric Learning in an Asymmetric Bimanual Task." Poster at: *Society for the Neural Control of Movement 25th Annual Meeting*; 20–24 April 2015; Charleston, SC.
- J. Ebert**, A. Mukovskiy, T. Dijkstra, and D. Sternad, "Why You Don't Spill Your Coffee." Poster at: *Northeastern University Research, Innovation, and Scholarship Expo (RISE)*; 9 April 2015; Boston, MA.
- J. Ebert**, S. Kim, D. Sternad, and S. Schaal, "Learning and exploration in a novel dimensionality-reduction task." Poster at: *Society for the Neural Control of Movement 24th Annual Meeting*; 20–25 April 2014; Amsterdam, NL.
- J. Ebert**, S. Park, and D. Sternad, "Asymmetric Learning in an Asymmetric Bimanual Task." Poster at: *Northeastern University Research, Innovation, and Scholarship Expo (RISE)*; 10 April 2014; Boston, MA.
- J. Ebert**, S. Park, and D. Sternad, "Asymmetric Learning in an Asymmetric Bimanual Task." Poster at: *Northeast Undergraduate Research and Development Symposium*; 2–3 March 2013; Biddeford, ME.
- J. Ebert**, S. Park, L. Griffin, T. O'Neil-Pirozzi, and D. Sternad, "Central Fatigue in Cognitive and Motor Performance." Poster at: *Northeastern University Research, Innovation, and Scholarship Expo (RISE)*; 29 March 2012; Boston, MA.

TALKS

- J. Ebert**, "Bioinspired Collective Robotics," *University of Queensland*; 14 May 2018.
- J. Ebert**, M. Gauci, and R. Nagpal, "Collective Perception and Decision Making in Heterogeneous Swarms," *Wyss Institute Molecular Robotics Initiative*; 14 September 2017.

TEACHING

Harvard University

CS 189: Autonomous Robot Systems, Teaching Fellow

Spring 2018

Northeastern University

CS 2510: Fundamentals of Computer Science, Teaching Assistant (2 semesters)
CS 2510: Fundamentals of Computer Science, Tutor (3 semesters)
Proactive Recruitment in Science and Mathematics (PRISM), Undergraduate Mentor

2014 – 2015
2012 – 2014
2011 – 2013

OUTREACH

Guest, *Brains On!* science podcast for kids live show
Volunteer, Boston Public Schools Science Fair

April 2018
2017, 2018

SERVICE

EuroHaptics 2016 volunteer
Northeastern Civic Engagement Program
Boston Bikes volunteer
Tutor team leader at TechBoston Academy
Brigham and Women's Hospital: Medical Career Exploration Program volunteer
Massachusetts General Hospital: Youth Program mentor

2016
2010 – 2015
2014 – 2015
2014
2011 – 2013
2010 – 2011

SKILLS

Programming

Python (including Django, NumPy, SciPy) • MATLAB • C/C++ (including OpenMP, AVR, Arduino) • HTML/CSS • \LaTeX • JavaScript • Java

Fabrication

Laser cutting • 3D printing • Vinyl cutting • CNC milling, ShopBot • Electronics design (Eagle) and production • Soldering • Sewing • Molding and casting

Other

Computer-aided design (OnShape) • Database design • Linux • Embedded programming • 3D motion capture • Kinematic and EEG data collection in human subjects

RELEVANT COURSEWORK

Computer Science

Biologically-inspired Multi-agent Systems • Distributed Systems • Machine Learning • Network Algorithms • Computational Neurodynamics • Artificial Intelligence • Robotics

Science and Engineering

How to Make (Almost) Anything • Biomimetics • Comparative Neurobiology • Human Neuroanatomy • Biochemistry • Genetics and Molecular Biology • Organic Chemistry

Mathematics

Biological Signal Processing • Statistics and Data Analysis • Multivariable Calculus • Linear Algebra • Differential Equations

ACTIVITIES AND INTERESTS

Harvard University curling team
Imperial College and Goodenough College fencing clubs
Northeastern University pep band, drumline, and wind ensemble
Cycling • Web design and development • Graphic design • Writing • Baking