

Brian Desnoyers

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EDUCATION

Tufts University School of Medicine, Boston, MA	2019 – 2023
Doctor of Medicine, expected	May 2023
Master of Public Health, expected	May 2023
Khoury College of Computer Sciences at Northeastern University, Boston, MA	2013 – 2019
Master of Science in Computer Science	April 2019
GPA: 4.00/4.00	
Specializations: Artificial Intelligence and Data Science	
Project: Detection and Stimulation of Movement During Sleep with Tactile Feedback (Apple Watch)	
Bachelor of Science in Computer Science and Biology	May 2017
GPA: 3.82/4.00	
Comp. Sci. GPA: 3.94/4.00	

WORK EXPERIENCE

Massachusetts Institute of Technology Lincoln Laboratory, Lexington, MA	
Assistant Technical Staff- Cyber Analytics and Decision Systems	2017 – 2019
<ul style="list-style-type: none">Developed components within a cybersecurity architecture for federal departments and agencies and performed supporting research, including systems analysis, data science, and design and execution of a longitudinal study to evaluate behavioral effects on security.	
Apple Inc., Pittsburgh, PA	
Productivity Applications Software Engineering Co-Op	July – December 2016
<ul style="list-style-type: none">Worked with a geographically distributed team to add tables to Apple Notes as part of iOS 11 and macOS High Sierra.Built the data model behind the tables feature, handling serialization and logic for deterministic merging across replicas for cloud sync and collaboration, as well as UI components.	
TAVANA LLC, Boston, MA	
Software Developer	2015 – 2016
<ul style="list-style-type: none">Developed a novel cyclist-driver communication application for iOS, using a combination of bluetooth, GPS, and web technologies.Designed firmware for SoC built around ARM Cortex CPU as part of cyclist-driver communication hardware.	

RESEARCH EXPERIENCE

Brigham and Women's Hospital, Boston, MA	
Research Collaborator	2017 – present
<ul style="list-style-type: none">Design and maintain cognitive testing software for field studies of shift work countermeasures. Assist with study design and execution.	
Sleep Laboratory Research Technician	2015 – 2016
<ul style="list-style-type: none">Monitored and interacted with inpatient subjects, including taking vital signs, collecting and processing biological specimens, and applying PSG electrodes (EEG, EOG, EMG, EKG).Executed protocols for multiple studies simultaneously and acted as study staff for numerous study interventions.Developed and presented a millisecond accurate psychomotor vigilance task for iOS devices along with mobile cognitive test management software, SQLite database, and automated scoring software for data from validation apparatus.	
Beth Israel Deaconess Medical Center, Boston, MA	
MD/MPH Program Field Experience	Summer 2020
<ul style="list-style-type: none">Performed feature engineering and model development to predict case severity based on available triage data, such as blood pressure, emergency severity index (ESI), and presenting problem. Identified features were used to train models to predict intubation events and central line placement later in emergency department course.	

- Presented "Triage Feature Engineering and Analytics at a Tertiary Care Emergency Department" at the Tufts MD/MPH summer field experience poster session.

VOLUNTEER EXPERIENCE

American Red Cross of Massachusetts, Cambridge, MA

Volunteer Instructor and Instructor Trainer	2013 – 2021
<ul style="list-style-type: none"> • Taught courses in CPR/AED, first aid, and caregiving skills to nurses and other healthcare providers, as well as lay responders. • Certified more than 1,000 people in American Red Cross courses. Mentored and trained new instructors as an instructor trainer. 	

EXTRACURRICULAR ACTIVITIES

Tufts University School of Medicine, Boston, MA

Artificial Intelligence in Medicine – Co-President 2020-2021	2019 – 2021
Artificial Intelligence in Medicine is a club at Tufts University School of Medicine with a goal of expanding Artificial Intelligence/Machine Learning literacy among the TUSM community and engaging with the various applications of data science in medicine. This has included planning and developing workshops based on areas of interest, hosting guest speakers, as well as online communication.	

Sharewood Project – Sexual and Reproductive Health Counselor 2020-2021	2019 – 2021
The Sharewood Project is a free health education program that provides limited health care services. Sexual and reproductive health counselors are responsible for providing sexual and reproductive health counseling services, including STI screening for community members attending the weekly clinic. Additional responsibilities include development of training materials for future counselors.	

Sunday Swim – Club Leader 2020-2021	2019 – 2021
Sunday Swim is a program where local high school students teach swimming to children and young adults with intellectual and developmental disabilities at the YMCA in Reading, MA. Medical student volunteers and staff float around buddy groups to help facilitate the program and to identify and prevent unsafe situations during the swim time.	

Northeastern University, Boston, MA

Housing and Residential Life – Resident Assistant	2015 – 2017
<ul style="list-style-type: none"> • Liaised with staff to form strong residence community and respond to resident concerns, issues, and emergencies. • Organized activities in areas of cultural competency, community engagement, critical thinking, and personal development. 	

College of Computer and Information Science – Teaching Assistant and Course Tutor	2014 – 2017
Department of Marine and Environmental Sciences – Biostatistics Course Tutor	2014 – 2015
<ul style="list-style-type: none"> • Guided students through assignments and difficult course material during office hours and facilitated weekly discussion section. • Graded exams and homework assignments. 	

Amphibious Achievement - Webmaster, Rowing Coach, and Mentor	2013 – 2014
Amphibious Achievement is a program for students from Boston public high schools, which provides a combination athletic and academic tutoring program. As a founding member and e-board member of the club, I was deeply involved in the process of starting a club at Northeastern. As a rowing coach, I went to MIT Amphibious Achievement practices to work with the students there while leading the development of the athletic program at Northeastern. We expanded the program to be distinct from that at MIT and included field trips, scavenger hunts, and other fun activities.	

Other Activities

Honors Program	2013 – 2017
Swim Club	2013 – 2017
CCIS Peer Mentor	2016 – 2017

AWARDS & HONORS

Volunteer of the Year by American Red Cross of Massachusetts

July 2018

An award given to 20 Red Cross volunteers from across Massachusetts who were nominated by their peers within each division of the American Red Cross; awarded for Preparedness, Health & Safety Services.

Huntington 100 by Northeastern University

April 2017

Sponsored by the Office of Student Life, the Huntington 100 honors outstanding students for achievements which are commensurate with the university's mission, ideals, values, and Academic Plan. In 2013, the 100 Most Influential Seniors program was rebranded as the Huntington 100, honoring distinguished juniors and seniors.

POSTERS & PUBLICATIONS

1. Lammers- van der Holst HM, Zhang Y, Barger LK, Wise JC, Murphy AS, Desnoyers BM, Qadri S, Ronda JM, Duffy JF. 299 Limited Time for Sleep in Night Shift Workers is associated with Risk of Insomnia and Shift Work Disorder. *Sleep*, Volume 44, Issue Supplement_2, May 2021, Pages A119-A120, <https://doi-org.eres.qnl.qa/10.1093/sleep/zsab072.298>.
2. Lammers- van der Holst HM, Zhang Y, Barger LK, Wise JC, Murphy AS, Desnoyers BM, Qadri S, Ronda JM, Duffy JF. Long shift duration is associated with high risk for Shift Work Disorder. *J Sleep Res* 2020; 29(S1):262.
3. Lammers-van der Holst HM, Zhang Y, Barger LK, Wise JC, Murphy AS, Desnoyers BM, Qadri S, Ronda JM, Duffy JF. Sex differences in sleep and quality of life in healthcare shift workers. *Sleep*. 2020; 43:A146-147.
4. Desnoyers BM, Weistroffer K, Hallapy J, Pisharody S. Interoperability and Information-Sharing Paradigm for IoT-Enabled Healthcare. In: *Cloud Network Management*. Chapman and Hall/CRC; 2020:151-174.
5. Lammers- van der Holst HM, Barger LK, Zhang Y, Murphy AS, Wise J, Desnoyers BM, Quadri S, Ronda JM, Duffy JF. Test of a sleep timing strategy to improve night shift performance in older healthcare workers. Abstracts, Discover Brigham 2019, Brigham and Women's Hospital, Boston MA, Nov 7, 2019.
6. Duffy JF, Lammers- van der Holst HM, Zhang Y, Barger LK, Ronda JM, Murphy AS, Wise J, Desnoyers BM. Test of a sleep timing strategy to improve night shift performance in older healthcare workers. Abstracts, 2019 Quality and Research Fair, Lowell General Hospital, Lowell MA, Oct 29, 2019.
7. Farjadian A, Al-Otaibi S, Kong Q, Farjadian E, Molaei A, Desnoyers BM, Winkeler Z, Magee LJ, Downie CE, Freeley CM. Bike Beacon: A Novel Cyclist and Pedestrian Collision Avoidance Technology. *RISE: Research, Innovation, and Scholarship Expo*. RISE:2015, Northeastern University, Boston MA, Apr 9, 2015.

Reviewer

1. 28th USENIX Security Symposium; August 2019