

Gavin Mischler

[LinkedIn](#) ◇ [GitHub](#)

EDUCATION

Johns Hopkins University

August 2016 - June 2020

Bachelor of Science, Biomedical Engineering, GPA 3.98/4.0

Baltimore, MD

- **Focus Area:** Biomedical Data Science
- **Relevant Courses:** Deep Learning, Machine Learning for Signal Processing, Neuro Data Design, Probability and Statistics, Computational Biology and Bioinformatics
- **Honors:** Tau Beta Pi (Top eighth of engineering class)

RESEARCH

Mathematical Institute for Data Science

September 2019 - July 2020

Undergraduate Researcher, Supervised by Dr. Benjamín Bérjar

Johns Hopkins University

- Combined sparse signal sampling theory and supervised learning to develop a pipeline for estimation of neural firings from noisy calcium imaging data.

Vestibular, Balance, Gaze Control Lab

July 2017 - July 2020

Undergraduate Researcher, Supervised by Dr. Kathleen Cullen

Johns Hopkins University

- Applied multiview embedding methods to a clinical dataset of subjective and objective measures of vestibular patient rehabilitation to predict patient outcomes and enhance clinical understanding of gold-standard tests.
- Analyzed gyroscopic motion data from vestibular patients to quantify patient deficits and improve outcomes.

WORK EXPERIENCE

Barclays

July 2020 - August 2020

Quantitative Trading Summer Associate

New York, NY

- Designed and tested a data processing pipeline to transform multiple sources of market information into a single usable signal for predictions.
- Experimented with supervised learning and multiview learning methods on alternative datasets to predict market returns using Python.

Medtronic

May 2019 - August 2019

Biomedical Engineering Intern - Tachycardia Research

Minneapolis, MN

- Developed a novel discrimination algorithm to improve cardiac arrhythmia detection.
- Analyzed a large dataset of medical signals in Python to predict future algorithm performance.

OtoGlobal Health, LLC

December 2017 - May 2020

Product Development Engineer

Baltimore, MD

- Built prototype circuitry for a novel, smartphone-based infant hearing screening device for low-resource settings.
- Worked cross-functionally to lead integration of the hardware and software (app-based controller).

Medtronic

May 2018 - August 2018

Biomedical Engineering Intern - Device Product Engineering

Minneapolis, MN

- Developed a benchtop test to characterize implanted device performance in various use-cases.

PEER-REVIEWED JOURNAL PUBLICATIONS

† denotes equal contribution

- ◆ Hu, K.[†], Lapinski, M. M.[†], **Mischler, G.**[†], Allen, R. H., Manbachi, A., & Seay, R. C.. Improved Treatment of Postpartum Hemorrhage: Design, Development, and Bench-Top Validation of a Reusable Intrauterine Tamponade Device for Low-Resource Settings. *Journal of Medical Devices*, 14(1) 2020.

PREPRINTS

† denotes equal contribution

- ◆ Ronan Perry[†], **Gavin Mischler**[†], Richard Guo[†], Theo Lee[†], Alexander Chang[†], Arman Koul[†], Cameron Franz[†], & Joshua T. Vogelstein. mvlearn: Multiview Machine Learning in Python. *arXiv preprint arXiv:2005.11890* 2020.

CONFERENCE POSTERS AND ABSTRACTS

- ✧ Omid Zobeiri, **Gavin Mischler**, Susan King, Richard Lewis, Kathleen Cullen. Identification of Vestibular Impairment in Schwannoma Patients Relative to Healthy Controls Requires Testing During More Challenging Gait Tests. *Association for Research in Otolaryngology Midwinter Meeting*, Baltimore, 2019.
- ✧ Aseem Jain, Sanjay Elangovan, **Gavin Mischler**, Taha Baig, Darian Low, Hadley VanRenterghem, Siya Zhang, Keilani Caruso, Gianluca Silva Croso, John Carey, Francis Creighton. A Bone Conducting Distortion Product Otoacoustic Emissions (DPOE) System for Newborn Hearing Screening in Low Resource Settings. *Association for Research in Otolaryngology Midwinter Meeting*, Baltimore, 2019.
- ✧ **Gavin Mischler**, Omid Zobeiri, Susan King, Richard Lewis, Kathleen Cullen. Head Movement During Functional Gait Assessment Predicts Clinical Measures in Vestibular Patients. *Bárány Society Meeting*, Uppsala, 2018.
- ✧ Omid Zobeiri, **Gavin Mischler**, Susan King, Richard Lewis, Kathleen Cullen. Identification of vestibular impairment in schwannoma patients relative to healthy controls requires testing during more challenging gait tests, while vestibular loss following surgery alters standard gait. *Neuroscience*, San Diego, 2018.

PROJECTS/SOFTWARE

mvlearn, mvlearn.neurodata.io

September 2019 - Present

Co-Developer

- * Open-source Python package for multi-view machine learning, using PyTorch, NumPy, and other basic packages.

AWARDS AND HONORS

Richard J. Johns Award for Outstanding Academic Achievement in BME	2020
Provost's Undergraduate Research Award (PURA) Fellowship	2019
William H. Huggins Award for a Junior in Electrical Engineering	2019
Biomedical Engineering Design Team Award for Most Outstanding Freshman	2017

TECHNICAL SKILLS

Languages	Python, R, MATLAB, Java, C++, C
Packages	PyTorch, scikit-learn, NumPy, SciPy, pandas

TEACHING

Biomedical Data Science Lab *EN.580.477*, Teaching Assistant

Fall 2019

PATENTS

Patent Pending: Seay, Rachel Chan, **Mischler, Gavin Moore**, Hu, Katherine, Lapinski, Maya, Marie. 2020. Treatment of hemorrhage with a reusable device. Application number WO2020081692, filed 10-16-2019.

VOLUNTEERING AND EXTRA-CIRRICULARS

National Ski Patrol, Wilmot Mountain, WI

2014 - 2016