Evan Dastin-van Rijn

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Education

Brown University **Providence, RI**
Bachelor of Science in Biomedical Engineering and Neuroscience Fall 2017-Present
Magna cum laude, Honors in Biomedical Engineering
Cumulative GPA 4.0/4.0

St. John's International School **Waterloo, Belgium**
43 points in the IB Diploma (HL: Chemistry, Math, Physics, Philosophy)

Research Experience

Research Assistant, Borton Laboratory 09/2018-Present
Assisted with a study working towards the development of an adaptive system to treat symptoms of OCD using deep brain stimulation (DBS)

- Developed Period-based Artifact Reconstruction and Removal Method (PARRM), a novel method for neurostimulation artifact removal showing improved performance over existing, state-of-the-art methods
- Developed Period Estimation of Lost Packets (PELP), a solution to temporal alignment of packet losses occurring during recordings with implanted bidirectional stimulators
- Analyzed and evaluated approaches to data imputation to enable interpretation of neural timeseries with missing samples
- Performed neural data analysis that was used to meet NIH milestones
- Programmed a cognitive control task using jsPsych for use in the clinic and at home settings
- Developed a neural and video data preprocessing pipeline for accurate temporal alignment of multimodal data streams
- Developed programs and workflows to aid in data validation and quality assurance

Research Assistant, Learning, Memory & Decision Lab 05/2020-Present
Developed a series of computational models in Matlab to determine and analyze differences in latent structure learning measured using a computer-based behavioral task

Research Assistant, Salomon Laboratory 05/2018-08/2018
Using Java, FileMaker, and R, incorporated the industry standard software package Maxquant into the laboratory's software pipeline.

Student, Phage Hunters 08/2017-05/2018
Designed an algorithm to generate PCR primers particular to specific bacteriophage clusters to aid in identification prior to sequencing. Primers successfully clustered more than 1500 different bacteriophage both theoretically and in practice.

Skills and Training

Programming: Matlab, Javascript, Java, Android, HTML/CSS, Git
Software: Adobe Suite, Solidworks, Simulink, Microsoft Office
Lab: Electroencephalography, electrocardiography, circuit design

Publications

- **Evan M. Dastin-van Rijn**[†], Nicole R. Provenza[†], Jonathan S. Calvert, Ro'ee Gilron, Anusha B. Allawala, Radu Darie, Sohail Syed, Evan Matteson, Gregory S. Vogt, Michelle Avendano-Ortega, Ana C. Vasquez, Nithya Ramakrishnan, Denise N. Oswalt, Kelly R. Bijanki, Robert Wilt, Philip A. Starr, Sameer A. Sheth, Wayne K. Goodman, Matthew T. Harrison, David A. Borton. Uncovering biomarkers during therapeutic neuromodulation with PARRM: Period-based Artifact Reconstruction and Removal Method *(Cell Reports Methods)*

- Nicole R. Provenza, Sameer A. Sheth, **Evan M. Dastin-van Rijn**, Raissa K. Mathura, Yaohan Ding, Gregory S. Vogt, Michelle Avendano-Ortega, Nithya Ramakrishnan, Noam Peled, Luiz Fernando Fracassi Gelin, David Xing, Laszlo A. Jeni, Itir Onal Ertugrul, Adriel Barrios-Anderson, Evan Matteson, Andrew D. Wiese, Junqian Xu, Ashwin Viswanathan, Kelly R. Bijanki, Eric A. Storch, Jeffrey F. Cohn, Wayne K. Goodman, David A. Borton., 2021. Chronic intracranial electrophysiology in ecologically valid environments for biomarker discovery in psychiatric disorders (*under review at Nature Medicine)*

- Nicole R. Provenza, Luiz Fernando Fracassi Gelin, Wasita Mahaphanit, Mary C. McGrath, **Evan M. Dastin-van Rijn**, Yunshu Fan, Rashi Dhar, Michael J. Frank, Maria I. Restrepo, Wayne K. Goodman, David A. Borton., 2021. Honeycomb: a template for reproducible psychophysiological tasks for clinic, laboratory, and home use. (*Brazilian Journal of Psychiatry)*

- **Evan M. Dastin-van Rijn**, Nicole R. Provenza, Wayne K. Goodman, Matthew T. Harrison, David. A. Borton., 2021. Accounting for missing data in neural time series with PELP: Periodic Estimation of Lost Packets. *(in preparation)*

Conferences and Poster Presentations

2021 Northeast Bioengineering Conference March 2020
"An adhesive sensor for measuring maternal sleeping position" (Presenter)
18th Society for Neuroeconomics Annual Meeting October 2020
"Investigating individual differences in latent structure learning in a changing environment" (Presenter)
6th Annual BRAIN Initiative Investigators Meeting June 2020
"A novel method for DBS artifact removal: Period-based Artifact Reconstruction and Removal Method for DBS" (Presenter)
6th Annual BRAIN Initiative Investigators Meeting June 2020
"Chronic VC/VS DBS for OCD modulates VC/VS spectral power during rest" (Co-author)
2019 UTRA Summer Research Symposium August 2019
"Artifact removal from Local Field Potential recordings during Deep Brain Stimulation" (Presenter)
5th Annual BRAIN Initiative Investigators Meeting June 2019
"Preliminary experience with developing adaptive Deep Brain Stimulation for Obsessive Compulsive Disorder" (Co-author)

Teaching Experience

Teaching Assistant, Brown University 11/2020-04/2021
Was responsible for designing problem set style homework assignments, guiding student progress, and assisting with extended, open-ended final projects for Neural Computation in Learning and Decision Making

Teaching Assistant, Brown University 11/2020-04/2021
Was responsible for managing homework, lab assignments, exams, office hours, and review sessions for Transport and Biotransport Processes

Teaching Assistant, Brown University 01/2020-05/2020
Instructed students in three, week-long, Matlab-based, design projects for Dynamics and Vibrations and held office hours to assist in debugging project code and writing reports

Meiklejohn Peer Advisor, Brown University 08/2019-05/2020
Advised a cohort of nine first-year, engineering students on adjusting to classes and lifestyle in a university setting

Classroom Assistant, STEMS 08/2018-05/2019
Assisted teachers with lessons in the classroom for high-school students in Algebra I, Geometry, and Algebra II at Hope High School in Providence

Mentor, PAL 08/2018-05/2019
Mentored two adults with learning disabilities (Stephie and Anthony) on topics of their choosing ranging from Jewish culture to driver's education

Awards

Outstanding Biomedical Engineering Senior Award	April 2021
NSF Graduate Research Fellowship	March 2021
Biomedical Engineering Graduate Merit Award	March 2021
Sigma Xi Honor Society	March 2021
Tau Beta Pi Honor Society	November 2019
Undergraduate Teaching and Research Award	May 2018
American Foreign Service Association Academic Merit Award	August 2017