

Research Interests

Machine learning for neural engineering, mechanisms of neural activity in natural human behaviours.

Education

University of Washington, Seattle WA – PhD Candidate and NSF Graduate Research Fellow, 2019-Present

University of Washington, Seattle WA – Master of Science in Computer Science, 2022

Virginia Commonwealth University, Richmond VA – Bachelor of Science in Computer Science, 2019

Technical Skills

Languages – Python, Java, R, Perl, C, SAS, Unix, MATLAB

Tools – Tensorflow, Keras, Android developer, GitHub, LaTeX, PyTorch

Research Experience

National Science Foundation Graduate Research Fellow, University of Washington – 2021-Present

Engineered an at-home multimodal data collection platform for optimizing adaptive deep brain stimulation for Parkinson's disease, automating assessments of symptom severity from video and wearable-sensor data.

Paul G. Allen School First-Year Ph.D. Fellow, University of Washington – 2019-2020

Machine learning for decoding speech production and natural behaviours in human neural recordings.

Undergraduate Research Assistant, VCU, Department of Computer Science – 2016-2019

Conducted research on building tools for genomics-based classification problems and pattern recognition through deep neural networks.

Science Education Alliance (SEA) – 2015

<https://www.hhmi.org/science-education/programs/science-education-alliance>

<https://www.ncbi.nlm.nih.gov/genbank/>

Participant in Phage Hunters Advancing Genomics and Evolutionary Science. Isolated novel bacteriophage from soil samples. Annotated genomes for submission to GenBank.

Research Assistant, University of Virginia, Computer Science Department – 2014-2017

Conducted hours of investigative research on large intellectual property and patent litigations, and consults in regards to problem solving and organization.

Teaching and Outreach

[NeuroMatch Academy](#) Course Developer (NMA-CD).

Developed course materials for [Week 2 Day 2](#) "Linear dynamical systems". Contributed to the design and creation of NMA teaching materials with tutorial design and Python implementation.

Writer for the [Center for Neurotechnology's Engage and Enable Blog](#).

A series for aspiring engineers and scientists. [Part I](#) explores how scientific research works and [Part II](#) shares insights about the process.

Student Led Seminar Committee for [UW Computational Neuroscience Center](#).

Started neural engineering seminar series featuring junior faculty and post-docs. Speakers are selected by undergraduate and graduate students.

Digital Media Coordinator for the [Student Leadership Council](#) at the [Center for Neurotechnology](#).

Content writing and social media engagement to promote research opportunities to students.

Publications

Strandquist, Gabrielle; Dixon, Tanner; Frączek, Tomasz; Ravi, Shravanan; Zeng, Alicia; Bechtold, Raphael; et al. (2023): In-Home Video and IMU Kinematics of Self Guided Tasks Correlate with Clinical Bradykinesia Scores. TechRxiv. Preprint. <https://doi.org/10.36227/techrxiv.22067474.v1>

t Hart, B., Achakulvisut, T., Adeyemi, A., Akrami, A., Alicea, B., Alonso-Andres, A., ... & Vishne, G. (2022). Neuromatch Academy: a 3-week, online summer school in computational neuroscience. Journal of Open Source Education, 5(49), 118.

Flounlacker, F., Johnson, A., Marquez, D., and Miller, R, on behalf of the 2015-2016 VCU Phage Hunters*, Complete genome sequences of Bacillus phages DirtyBetty and Kida, Genome Announcement

Posters

[Dean's Undergraduate Research Symposium](#), 2018

[Phage Lab Infographic](#), 2016

Awards

[National Science Foundation Graduate Research Fellow](#), 2021

Paul G. Allen School Dean's First-Year Ph.D. Fellowship, 2019

[Winner of the Dean's Undergraduate Research Symposium](#), 2nd place, VCU, 2018

Dean's Undergraduate Research Initiative (DURI) Fellow, VCU, 2018

Goldwater Scholarship Honourable Mention, 2017

Phi Kappa Phi – Life Sciences Undergraduate Scholarship, 2017

Dean's List, Virginia Commonwealth University, 2014 – 2019

Academic Achievement Award NB, Virginia Commonwealth University, 2015 – 2019

Mentored Students

Zeynep Toprakbasti, Undergraduate in UW Computer Science and Engineering, 2020 – Present