Biraj Pandey

Applied Mathematics
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Seattle, WA 98105
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EDUCATION:

University of Washington, Seattle, WA   2018 – Present
Ph.D. Student in Applied Mathematics — GPA: 3.8
Advisor: Bing Brunton

University of Texas at Austin, Austin, TX   2013 – 2017
Bachelor of Science: Pure Mathematics, Neuroscience — GPA: 3.87
Advisor: Ila Fiete & Rishidev Chaudhuri

RESEARCH INTERESTS:

My interests lie in theoretical neuroscience and machine learning, in particular, in mechanisms and theories of neural computation, neural data analysis, biologically-inspired learning algorithms, and theory of deep learning.

AWARDS, SCHOLARSHIPS, AND DISTINCTIONS:

NSF Graduate Research Fellowship	2020
Achievement Rewards for College Scientists (ARCS) fellowship for $17,500 over three years	2018
Frederic Wan Endowed Fellowship	2018
UT Austin Distinguished Scholar	2017
Blocker-Cramer Endowed Fellowship	2017
21st Century Presidential Endowed Scholarship	2015
Top 8% Scholarship	2013

PUBLICATIONS:

Chaudhuri, R., Gerçek, B.*, **Pandey, B.***, Peyrache, A., & Fiete, I. The intrinsic attractor manifold and population dynamics of a canonical cognitive circuit across waking and sleep. *Nature Neuroscience.* **22**, 1512-1520 (2019).

INVITED PARTICIPATION:

ADSI Summer School on Foundations of Data Science — Univ. of Wash., WA   Summer 2019

Physics Informed Machine Learning Workshop — Univ. of Wash., WA   Spring 2019

Machine Learning Internship at Using.AI with HK RIPS — HKUST, HK   Summer 2018
Advisor: Bhaven Misty

ICERM NSF REU Program — Brown University, RI   Summer 2017
Research Advisor: Jose Perea and Chris Tralie

Undergraduate Computational Neuroscience Research — UT Austin, TX   Spring 2015
Research Advisor: Rishi Chaudhuri and Ila Fiete

Undergraduate Experimental Neuroscience Research — UT Austin , TX   Fall 2014
Research Advisor: Michael Mauk and Andrei Khilkevich

Undergraduate Molecular Biology Research — UT Austin , TX   Spring 2013
Research Advisor: Scott Stevens and Al Mackrell

INVITED POSTER SESSIONS:

Pandey, B. & Wellen, N. *Combating Wealth Inequality: Exploring Its Causes Through Model Discovery.* Physics Informed Machine Learning Workshop. (Seattle, WA, 2019)

Shener, C., **Pandey, B.**, Klee, A., Wang, B. & Misty, B. *Semi-supervised Learning for Visual Semantics.* Mathematical Association of America (MAA) Undergraduate Student Poster Session. (Baltimore, MD, 2019).

Chaudhuri, R., Gerçek, B., **Pandey, B**., & Fiete, I. *Unsupervised latent variable extraction from neural data to characterize processing across states.* Computational and Systems Neuroscience (CoSyNe). (Salt Lake City, UT, 2017)

Chaudhuri, R., Gerçek, B., **Pandey, B**., & Fiete, I. *Unsupervised latent variable extraction from neural data to characterize processing across states.* Annual Meeting of Society for Neuroscience (SfN). (Washington, DC, 2017)

Pandey, B., Mackrell, A., & Stevens, S. *Proteome and function of DHX15 gene.* UT Austin 2014 Undergraduate Research Symposium (Austin, TX, 2014).

SERVICE AND OUTREACH:

External Reviewer for IEEE Trans. Signal Process	2020
Student Liaison, Faculty Search Committee, UW AMATH	2019 — present
Member, Society of Industrial and Applied Mathematics (SIAM), UW AMATH	2018 — present
Member, Diversity Committee, University of Washington AMATH	2019 — present
Senator, Graduate & Professional Student Senate GPSS, UW AMATH	2018 – 2019
Treasurer, Komputers in Developing Schools (KIDS), UT Austin	2015 — 2016

TEACHING ASSISTANTSHIPS:

Algebra with Applications	Fall 2019
Calculus with Analytic Geometry II	Fall 2019
Calculus with Analytic Geometry II	Winter 2019
Neural Systems I, UT Austin	Fall 2015