

Ronan Perry

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Education

University of Washington

P.H.D. STATISTICS

Seattle, WA

Sept 2022 - May 2027 (expected)

Johns Hopkins University

M.S.E. BIOMEDICAL ENGINEERING (ADVISOR: JOSHUA VOGELSTEIN)

Baltimore, MD

May 2020

- **Thesis:** *Manifold-aware Forests: Closing the Gap to Convolutional Neural Networks*

Johns Hopkins University

B.S. APPLIED MATHEMATICS & STATISTICS

Baltimore, MD

Dec 2019

Research Positions

University of Washington

RESEARCH ASSISTANT (ADVISOR: DANIELA WITTEN)

Seattle, WA

Sept 2022 - Current

- Selective inference hypothesis tests for the SVD.

Max Planck Institute for Intelligent Systems

FULBRIGHT RESEARCH FELLOW (ADVISOR: BERNHARD SCHÖLKOPF)

Tübingen, Germany

Sept 2021 - July 2022

- Causal discovery from multi-environment data under distribution shifts.

Johns Hopkins University

RESEARCH ASSISTANT (ADVISOR: JOSHUA VOGELSTEIN)

Baltimore, MD

Jan. 2019 - July 2021

- Random forest theory/methods for improved calibration and structured data such as images and time series.
- Network science, representation learning, and multilevel nonparametric hypothesis testing for neuroscience.
- Leading and contributing to open source software development of Python packages.

Ecole Polytechnique Federale de Lausanne

RESEARCH INTERN (ADVISOR: ELVIRA PIRONDINI)

Geneva, Switzerland

May 2018 - Aug 2018

- MRI image segmentation and fMRI signal processing in MATLAB.

Professional Experience

Rheonix Inc.

SOFTWARE DEVELOPMENT INTERN

Ithaca, NY

May 2017 - Aug 2017

- Image classifier optimization and automation of log collection/analyses.

URSA Space Systems

SOFTWARE DEVELOPMENT INTERN

Ithaca, NY

Apr 2016 - Aug 2016

- Data linkage via matching algorithms, satellite image object detectors, AWS/mongoDB ETL automation.

Awards

- 2022 **NeurIPS Scholar Award**, Travel funding
- 2021 **Fulbright Finalist**, Research Fellowship
- 2019 **Departmental Honors**, Johns Hopkins Applied Mathematics & Statistics

Publications

Peer-Reviewed Publications

- [1] **Ronan Perry**, Julius von Kügelgen, and Bernhard Schölkopf. “Causal Discovery in Heterogeneous Environments under the Sparse Mechanism Shift Hypothesis”. In: *Conference and Workshop on Neural Information Processing Systems (NeurIPS) (2022)*.
- [2] Adam Li, **Ronan Perry**, Chester Huynh, Tyler M. Tomita, Ronak Mehta, Jesus Arroyo, Jesse Patsolic, Benjamin Falk, and Joshua T. Vogelstein. “Manifold Oblique Random Forests: Towards Closing the Gap on Convolutional Deep Networks”. In: *SIAM Journal on Mathematics of Data Science (SIMODS) (2022)*.
- [3] **Ronan Perry**, Gavin Mischler, Richard Guo, Theodore Lee, Alexander Chang, Arman Koul, Cameron Franz, Hugo Richard, Iain Carmichael, Pierre Ablin, et al. “mvlern: Multiview Machine Learning in Python”. In: *Journal of Machine Learning Research (JMLR) 22.109 (2021)*, pp. 1–7.

Pre-prints

- [1] **Ronan Perry**, Ronak Mehta, Richard Guo, Eva Yezerets, Jesús Arroyo, Mike Powell, Hayden Helm, Cencheng Shen, and Joshua T Vogelstein. “Random Forests for Adaptive Nearest Neighbor Estimation of Information-Theoretic Quantities”. In: *arXiv preprint arXiv:1907.00325 (2021)*.
- [2] Sambit Panda, Cencheng Shen, **Ronan Perry**, Jelle Zorn, Antoine Lutz, Carey E Priebe, and Joshua T Vogelstein. “Nonpar MANOVA via Independence Testing”. In: *arXiv preprint arXiv:1910.08883 (2021)*.

Conferences & Presentations

2022	NeurIPS , (Accepted paper and poster)	<i>New Orleans, USA</i>
2022	SIAM Conference on Mathematics of Data Science , (Invited workshop talk)	<i>San Diego, USA</i>
2021	NeurIPS , (Out-of-distribution Learning Workshop Program Committee)	<i>Virtual</i>
2020	Neuromatch , (Accepted abstract and presentation)	<i>Virtual</i>
2020	Organization of Human Brain Mapping , (Accepted abstract and presentation)	<i>Virtual</i>

Teaching

2019	Teaching Assistant , Applied Math 430: Introduction to Statistics	<i>Johns Hopkins</i>
2018	Teaching Assistant , Applied Math 420: Introduction to Probability	<i>Johns Hopkins</i>

Open Source Software

mvlern	[Owner] A <i>Python</i> package for multiview learning methods. mvlern.github.io
honest-forests	[Owner] A <i>Python</i> package for scikit-learn compliant honest decision forests. Github
hyppo	[Contributor] A <i>Python</i> package for multivariate hypothesis testing. Github
graspologic	[Contributor] A <i>Python</i> package for modeling and inference on network-valued data. Github

Languages & Tools

Experienced	Python, \LaTeX
Intermediate	R, German, Git
Basic	Bash, Inkscape, Java, MATLAB, Perl