Ian Connick Covert

Curriculum Vitae

Paul G. Allen School of Computer Science & Engineering
University of Washington
Seattle, WA, 98195

Email: icovert@cs.washington.edu
Web: iancovert.com

Education

University of Washington, Seattle, WA
Ph.D. in Computer Science, Expected 2022
Advisor: Su-In Lee

Columbia University, New York, NY
B.A. in Math/Statistics, B.A. in Computer Science, May 2017
Summa Cum Laude, Phi Beta Kappa, GPA 4.00/4.33

French American International High School, San Francisco, CA
International Baccalaureate Diploma (Bilingual in French), June 2013
GPA: 4.15/4.25

Employment and Research Experience

Research Assistant, AIMS Lab, University of Washington   January 2019-Present
Advisor: Su-In Lee
Explainability and feature selection for black-box machine learning models.

Student Researcher, Google AI Healthcare   September 2018-March 2019
Manager: Ming Jack Po, Jiening Zhan
Topologically-aware deep learning for EEG seizure detection.

Research Intern, Google AI Healthcare   June 2018-September 2018
Manager: Ming Jack Po, Jiening Zhan
Interpretability methods for deep learning EEG seizure detection models.

Research Assistant, MODE Lab, University of Washington   September 2017-December 2018
Advisor: Emily Fox
Nonlinear Granger causality discovery with neural networks.

Investment Banking Strategist Summer Analyst, Goldman Sachs   June 2016-August 2016
Manager: Ketan Vyas, Joey Allcock.
Interest rate derivatives credit risk pricing, data-driven share allocation for equity issuances.

Undergraduate Research Assistant, Columbia University   February 2016-May 2017
Advisor: Liam Paninski
Neuron structure discovery from calcium imaging video.

Investment Banking Summer Analyst, Société Générale   June 2015-August 2015
Manager: Barry Cohen
Interest rates derivatives pricing, swap market volatility research.

PUBLICATIONS AND PREPRINTS

Ian Covert, Scott Lundberg, Su-In Lee. "Explaining by Removing: A Unified Framework for Model Explanation." Preprint.

Ian Covert, Su-In Lee. "Improving KernelSHAP: Practical Shapley Value Estimation via Linear Regression." Artificial Intelligence and Statistics (AISTATS) 2020.

Ian Covert, Scott Lundberg, Su-In Lee. "Feature Removal Is A Unifying Principle For Model Explanation Methods." Neural Information Processing Systems (NeurIPS) Machine Learning Retrospectives, Surveys & Meta-Analyses (ML-RSA) Workshop 2020.

Ian Covert, Scott Lundberg, Su-In Lee. "Understanding Global Feature Contributions With Additive Importance Measures." Neural Information Processing Systems (NeurIPS) 2020.

Ian Covert, Uygar Sümbül, Su-In Lee. "Deep Unsupervised Feature Selection." Preprint.

Alex Tank*, Ian Covert*, Nicholas Foti, Ali Shojaie, Emily Fox. "Neural Granger Causality." Transactions on Pattern Analysis and Machine Intelligence (TPAMI). (*Authors contributed equally.)

Ian Covert, Scott Lundberg, Su-In Lee. "Shapley Feature Utility." Machine Learning in Computational Biology (MLCB) Workshop 2019.

Ian Covert, Uygar Sümbül, Su-In Lee. "Principal Genes Selection." Machine Learning in Computational Biology (MLCB) Workshop 2019.

Ian Covert, Balu Krishnan, Imad Njam, Jiening Zhan, Matthew Shore, John Hixson, Ming Jack Po. "Temporal Graph Convolutional Networks for Automatic Seizure Detection." Machine Learning for Healthcare (MLHC) 2019.

Jiening Zhan, Hector Yee, Ian Covert, Jiang Wu, Albee Ling, Matthew Shore, Eric Teasley, Rebecca Davies, Tiffany Kung, Justin Tansuwan, John Hixson and Ming Jack Po. "EEG Seizure Detection via Deep Neural Networks: Application and Interpretation." Neural Information Processing Systems (NeurIPS) Machine Learning for Health (ML4H) Workshop 2018.

Alex Tank, Ian Covert, Nicholas Foti, Ali Shojaie, Emily Fox. "An Interpretable and Sparse Neural Network Model for Nonlinear Granger Causality Discovery." Neural Information Processing Systems (NeurIPS) Time Series Workshop 2017.

INVITED TALKS

- Fiddler Labs, February 2021
- Hong Kong Machine Learning, January 2021
- Aggregate Intellect, December 2020
- Quant University, December 2020

CONFERENCE REVIEWING

- Artificial Intelligence and Statistics (AISTATS) 2021
- International Conference on Learning Representations (ICLR) 2020
- International Conference on Machine Learning (ICML) 2020, 2021
- Machine Learning for Healthcare (MLHC) 2020
- Machine Learning in Computational Biology (MLCB) 2019, 2020
- Neural Information Processing Systems (NeurIPS) 2018, 2019, 2020

TEACHING

Teaching assistant, Convex Optimization (EE578), University of Washington   Winter 2019
Professor: Maryam Fazel
Taught lectures, taught biweekly review sessions, wrote exam questions, graded homework.

Instructor, Code IHS, French American International High School   Winter 2017
Instructors: Ian Covert, Sumner Hearth, Pierre-Alexander Low
Designed and taught a two-week computer science course for high school students.

AWARDS

- Summa Cum Laude, Columbia University, 2017
- Phi Beta Kappa, Columbia University, 2017
- Computer Science Award for Academic Excellence, Columbia University, 2017
- Upton Fellowship, Princeton University, 2017 (Did not attend)
- Computer Science Excellence Fellowship, UIUC, 2017 (Did not attend)
- Computer Science Faculty First Year Fellowship, UMass Amherst, 2017 (Did not attend)

SERVICE AND VOLUNTEERING

- Graduate Applications Reader, University of Washington, 2020
- Computer Science Ph.D. Mentoring, University of Washington, 2018-2019
- Visit Days Coordination, University of Washington, 2018
- Computer Science Undergraduate Mentoring, Columbia University, 2016-2017