Ethan Weinberger

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Education

University of Washington   *Seattle, WA*
PHD IN COMPUTER SCIENCE AND ENGINEERING   *2019 - 2025 (expected)*
- Advisor: Dr. Su-In Lee

University of Washington   *Seattle, WA*
MS IN COMPUTER SCIENCE AND ENGINEERING   *2019 - 2021*
- Advisor: Dr. Su-In Lee

Yale University   *New Haven, CT*
BS IN COMPUTER SCIENCE AND MATHEMATICS   *2014-2018*
- Graduated *cum laude*, with distinction in the major

Research Experience

2019-present	**Ph.D Student Researcher**, Department of Computer Science, University of Washington Advisor: Dr. Su-In Lee
Summer 2024	**Machine Learning Research Intern**, Insitro Host: Dr. Angela Pisco
Summer 2022	**Machine Learning Research Intern**, Genentech Research and Early Development (gRED) Host: Dr. Aviv Revev
2017-2018	**Undergraduate Research Assistant**, Department of Pathology, Yale School of Medicine Advisor: Dr. Yuval Kluger

Publications

(* denotes equal contribution)

PREPRINTS & WORKING PAPERS

Ethan Weinberger, Wei Qiu, Wei Tian, Quirui Zeng, Martin Kim, Can Ergen, Nir Yosef, Joseph Ecker, and Su-In Lee. "A deep generative model of single-cell methylomic data." Early version presented at *NeurIPS Generative AI and Biology (GenBio) Workshop* 2023. [PDF]

REFEREED JOURNAL PUBLICATIONS

Nature Methods	**Ethan Weinberger***, Chris Lin*, and Su-In Lee. "Isolating salient variations of interest in single-cell data with contrastiveVI." *Nature Methods* (2023). [PDF] [Research Briefing]
Nature Communications	Nicasia Beebe-Wang, Safiye Celik, **Ethan Weinberger** et al. "Unified AI framework to uncover deep interrelationships between gene expression and Alzheimer's disease neuropathologies." *Nature Communications* (2021). [PDF]

REFEREED CONFERENCE PUBLICATIONS

NeurIPS 2023	**Ethan Weinberger**, Ian Covert, and Su-In Lee. "Feature Selection in the Contrative Analysis Setting." *Advances in Neural Information Processing Systems* (NeurIPS), 2023 [PDF]
AISTATS 2022	**Ethan Weinberger**, Nicasia Beebe-Wang, and Su-In Lee. "Moment matching deep contrastive latent variable models." *Artificial Intelligence and Statistics* (AISTATS), 2022 [PDF]
NeurIPS 2020	**Ethan Weinberger**, Joseph Janizek, and Su-In Lee. "Learning deep attribution priors based on prior knowledge." *Advances in Neural Information Processing Systems* (NeurIPS), 2020 [PDF]

REFEREED WORKSHOP PAPERS

NeurIPS AIDrugX 2024	**Ethan Weinberger**, Ryan Conrad, and Tal Ashuach "Modeling variable guide efficiency in pooled CRISPR screens with ContrastiveVI+" *NeurIPS AI for New Drug Modalities (AIDrugX) Workshop* 2024 [PDF]
NeurIPS GenBio 2023	**Ethan Weinberger**, and Su-In Lee. "A deep generative model of single-cell methylomic data." *NeurIPS Generative AI and Biology (GenBio) Workshop* 2023. [PDF]
MLCB 2022	**Ethan Weinberger**, Romain Lopez, Jan-Christian Hütter and Aviv Regev. "Disentangling shared and group-specific variations in single-cell transcriptomics data with multiGroupVI." *Machine Learning in Computational Biology* (MLCB) 2022. Selected for an oral presentation and publication in the JMLR proceedings. [PDF]
MLCB 2020	**Ethan Weinberger** and Su-In Lee. "HD-MD: Batch-effect free embeddings of scRNA-seq data." *Machine Learning in Computational Biology* (MLCB) 2020. [PDF]

Awards and Fellowships

2023	**Top Reviewer Award**, NeurIPS 2023	
2020-2025	**NSF Graduate Research Fellowship**, National Science Foundation	*$ 138,000*
2019-2020	**Paul G. Allen School of Computer Science & Engineering Research Fellowship**, University of Washington	*$ 64,000*
2015	**Richard U. Light Fellowship**, Yale University	*$ 8,000*

Teaching Experience

Fall 2023	**Graduate Computational Biology (CSE 527)**, Teaching Assistant	*University of Washington*
Fall 2021	**Graduate Computational Biology (CSE 527)**, Teaching Assistant	*University of Washington*

Mentoring

2023	**Seo-Yoon Moon**, Seoul National University Undergraduate	*Now: Ph.D Student at Carnegie Mellon University*

Other Work Experience

2018-2019	**Software Engineer**, Bridgewater Associates. Worked on scaling up Bridgewater's big-data cloud infrastructure and developed new abstractions to improve the productivity of Bridgewater's machine learning researchers.	*Westport, CT*

Outreach & Professional Development

SERVICE

2021-2023	**Committee Member**, University of Washington Department of Computer Science and Engineering Ph.D Student Visit Days
2020	**First-year student mentor**, University of Washington Department of Computer Science and Engineering
2020, 2023	**Application reader**, University of Washington Department of Computer Science and Engineering Ph.D admissions
2020	**Application mentor**, University of Washington Department of Computer Science and Engineering Ph.D Program Pre-application Review Service (PARS)

Peer Review (Journals)

2023	Annals of Applied Statistics

Peer Review (Conferences)

2021-2024	Neural Information Processing Systems (NeurIPS)
2021-2023	International Conference on Learning Representations (ICLR)
2023	International Conference on Machine Learning (ICML)
2022, 2024	Machine Learning in Computational Biology (MLCB)
2022	International Conference on Artificial Intelligence and Statistics (AISTATS)
2022	Research in Computational Molecular Biology (RECOMB)