

Research

My research in **machine learning** focuses on improving the processes by which humans teach and instruct computers. That includes learning to generalize from fewer examples, with methods like zero-shot and few-shot learning, as well as engineering training data, with methods like synthetic data generation and programmatic weak supervision. I measure that improvement in terms of reduction in the effort required by people—especially non-computer scientists in specialized, technical domains—to get computers to do what they want. Applications of our work include information extraction, image understanding, scientific discovery, and other areas of data science.

Positions

Eliot Horowitz Assistant Professor Brown University Computer Science Department	Providence, RI 2025–Present
Assistant Professor Brown University Computer Science Department	Providence, RI 2018–2025
Research Scientist Snorkel AI	Menlo Park, CA 2019–Present
Visiting Scholar Google	Mountain View, CA 2018
Postdoctoral Scholar Stanford University Computer Science Department Advisor: Christopher Ré	Stanford, CA 2015–2018

Education

Ph.D., Computer Science, 2015 University of Maryland, College Park Advisor: Lise Getoor Dissertation: Hinge-Loss Markov Random Fields and Probabilistic Soft Logic: A Scalable Approach to Structured Prediction Committee: Rama Chellappa, Hal Daumé III, Larry Davis, Kevin Murphy Larry S. Davis Doctoral Dissertation Award	
B.S., Computer Science and Mathematics (double major), 2010 Georgetown University Advisor: Mark Maloof Magna Cum Laude	

Publications**Pre-Prints**

Z.-X. Yong*, M. F. Adilazuarda*, J. Mansurov*, R. Zhang*, N. Muennighoff, C. Eickhoff, G. I. Winata, J. Kreutzer, S. H. Bach, and A. F. Aji, “Crosslingual reasoning through test-time scaling,” *arXiv:2505.05408 [cs.CL]*, 2025.

Y. S. Chan*, Z.-X. Yong*, , and S. H. Bach, “Can we predict alignment before models finish thinking? Towards monitoring misaligned reasoning models,” *arXiv:2507.12428 [cs.CL]*, 2025.

Journal Papers

R. Smith*, J. A. Fries*, B. Hancock, and S. H. Bach, “Language models in the loop: Incorporating prompting into weak supervision,” *ACM/IMS Journal of Data Science*, 2023.

N. V. Nayak and S. H. Bach, “Zero-shot learning with common sense knowledge graphs,” *Transactions on Machine Learning Research (TMLR)*, 2022.

A. J. Ratner, S. H. Bach, H. E. Ehrenberg, J. Fries, S. Wu, and C. Ré, “Snorkel: Rapid training data creation with weak supervision,” *The VLDB Journal*, vol. 29, no. 2, pp. 709–730, 2020.

S. H. Bach, M. Broeckeler, B. Huang, and L. Getoor, “Hinge-loss Markov random fields and probabilistic soft logic,” *Journal of Machine Learning Research (JMLR)*, vol. 18, no. 109, pp. 1–67, 2017.

G. Farnadi, S. H. Bach, M. Blondeel, M.-F. Moens, L. Getoor, and M. De Cock, “Soft quantification in statistical relational learning,” *Machine Learning*, 2017.

Peer-Reviewed Conference Papers

M. Zuo*, F. P. Velez*, X. Li, M. L. Littman, and S. H. Bach, “Planetarium: A rigorous benchmark for translating text to structured planning languages,” in *Conference of the Nations of the Americas Chapter of the Association for Computational Linguistics (NAACL)*, 2025.

Selected for oral presentation.

A. Mazzetto, R. Esfandiarpoor, E. Upfal, and S. H. Bach, “An adaptive method for weak supervision with drifting data,” in *Artificial Intelligence and Statistics (AISTATS)*, 2025.

T. Abdullahi, I. Gemou, N. V. Nayak, G. Murtaza, S. H. Bach, C. Eickhoff, and R. Singh, “K-paths: Reasoning over graph paths for drug repurposing and drug interaction prediction,” in *ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD)*, 2025.

A. Khandelwal, T. Yun, N. V. Nayak, J. Merullo, S. H. Bach, C. Sun, and E. Pavlick, “\$100k or 100 days: Trade-offs when pre-training with academic resources,” in *Conference on Language Modeling (COLM)*, 2025.

Z.-X. Yong, B. Ermis, M. Fadaee, S. H. Bach, and J. Kreutzer, “The state of multilingual llm safety research: From measuring the language gap to mitigating it,” in *Empirical Methods in Natural Language Processing (EMNLP)*, 2025.

R. Esfandiarpoor*, G. Zerveas*, R. Zhang, M. Mgonzo, C. Eickhoff, and S. H. Bach, “Beyond contrastive learning: Synthetic data enables list-wise training with multiple levels of relevance,” in *Empirical Methods in Natural Language Processing (EMNLP) Findings*, 2025.

R. Esfandiarpoor, C. Menghini, and S. H. Bach, “If CLIP could talk: Understanding vision-language model representations through their preferred concept descriptions,” in *Empirical Methods in Natural Language Processing (EMNLP)*, 2024.

X. Li*, Z.-X. Yong*, and S. H. Bach, “Preference tuning for toxicity mitigation generalizes across languages,” in *Empirical Methods in Natural Language Processing (EMNLP) Findings*, 2024.

Z.-X. Yong, C. Menghini, and S. H. Bach, “LexC-Gen: Generating data for extremely low-resource languages with large language models and bilingual lexicons,” in *Empirical Methods in Natural Language Processing (EMNLP) Findings*, 2024.

R. Esfandiarpoor and S. H. Bach, “Follow-up differential descriptions: Language models resolve ambiguities for image classification,” in *International Conference on Learning Representations (ICLR)*, 2024.

M. Lewis*, N. V. Nayak*, P. Yu, Q. Yu, J. Merullo, S. H. Bach, and E. Pavlick, “Does CLIP bind concepts? Probing compositionality in large image models,” in *Meeting of the European Chapter of the ACL (EACL) Findings*, 2024.

N. V. Nayak, Y. Nan, A. Trost, and S. H. Bach, “Learning to generate instruction tuning datasets for zero-shot task adaptation,” in *Meeting of the Association for Computational Linguistics (ACL) Findings*, 2024.

N. V. Nayak*, P. Yu*, and S. H. Bach, “Learning to compose soft prompts for compositional zero-shot learning,” in *International Conference on Learning Representations (ICLR)*, 2023.

C. Menghini, A. Delworth, and S. H. Bach, “Enhancing CLIP with CLIP: Exploring pseudolabeling for limited-label prompt tuning,” in *Neural Information Processing Systems (NeurIPS)*, 2023.

J. Su*, P. Yu*, J. Zhang, and S. H. Bach, “Leveraging large language models for structure learning in prompted weak supervision,” in *IEEE International Conference on Big Data (Big Data)*, 2023.

V. Sanh*, A. Webson*, C. Raffel*, S. H. Bach*, L. Sutawika, Z. Alyafeai, A. Chaffin, A. Stiegler, T. L. Scao, A. Raja, M. Dey, M. S. Bari, C. Xu, U. Thakker, S. Sharma, E. Szczechla, T. Kim, G. Chhablani, N. V. Nayak, D. Datta, J. Chang, M. T.-J. Jiang, H. Wang, M. Manica, S. Shen, Z. X. Yong, H. Pandey, R. Bawden, T. Wang, T. Neeraj, J. Rozen, A. Sharma, A. Santilli, T. Fevry, J. A. Fries, R. Teehan, S. Biderman, L. Gao, T. Bers, T. Wolf, and A. M. Rush, “Multitask prompted training enables zero-shot task generalization,” in *International Conference on Learning Representations (ICLR)*, 2022. **Selected for spotlight presentation, 5% of submitted papers (176/3391).**

P. Yu, T. Ding, and S. H. Bach, “Learning from multiple noisy partial labelers,” in *Artificial Intelligence and Statistics (AISTATS)*, 2022.

W. Piriyakulkij, C. Menghini, R. Briden, N. V. Nayak, J. Zhu, E. Raisi, and S. H. Bach, “TAGLETS: A system for automatic semi-supervised learning with auxiliary data,” in *Conference on Machine Learning and Systems (MLSys)*, 2022.

J. Dai, S. Upadhyay, U. Aivodji, S. H. Bach, and H. Lakkaraju, “Fairness via explanation quality: Evaluating disparities in the quality of post hoc explanations,” in *AAAI/ACM Conference on Artificial Intelligence, Ethics, and Society (AIES)*, 2022.

J. A. Fries*, L. Weber*, N. Seelam*, G. Altay*, D. Datta, S. Garda, M. Kang, R. Su, W. Kusa, S. Cahyawijaya, F. Barth, S. Ott, M. Samwald, S. H. Bach, S. Biderman, M. Sänger, B. Wang, A. Callahan, D. L. Perifán, T. Gigant, P. Haller, J. Chim, J. D. Posada, J. M. Giorgi, K. R. Sivaraman, M. Pàmies, M. Nezhurina, R. Martin, M. Cullan, M. Freidank, N. Dahlberg, S. Mishra, S. Bose, N. M. Broad, Y. Labrak, S. S. Deshmukh, S. Kiblawi, A. Singh, M. C. Vu, T. Neeraj, J. Golde, A. V. del Moral, and B. Beilharz, “BigBIO: A framework for data-centric biomedical natural language processing,” in *Neural Information Processing Systems (NeurIPS) Datasets and Benchmarks Track*, 2022.

A. Mazzetto*, C. Menghini*, A. Yuan, E. Upfal, and S. H. Bach, “Tight lower bounds on worst-case guarantees for zero-shot learning with attributes,” in *Neural Information Processing Systems (NeurIPS)*, 2022.

A. Mazzetto*, C. Cousins*, D. Sam, S. H. Bach, and E. Upfal, “Adversarial multiclass learning under weak supervision with performance guarantees,” in *International Conference on Machine Learning (ICML)*, 2021.

A. Mazzetto, D. Sam, A. Park, E. Upfal, and S. H. Bach, “Semi-supervised aggregation of dependent weak supervision sources with performance guarantees,” in *Artificial Intelligence and Statistics (AISTATS)*, 2021.

E. Safranchik, S. Luo, and S. H. Bach, “Weakly supervised sequence tagging from noisy rules,” in *AAAI Conference on Artificial Intelligence (AAAI)*, 2020.

S. H. Bach, D. Rodriguez, Y. Liu, C. Luo, H. Shao, C. Xia, S. Sen, A. Ratner, B. Hancock, H. Alborzi, R. Kuchhal, C. Ré, and R. Malkin, “Snorkel DryBell: A case study in deploying weak supervision at industrial scale,” in *International Conference on Management of Data (SIGMOD) Industry Track*, 2019.

A. J. Ratner, S. H. Bach, H. E. Ehrenberg, J. Fries, S. Wu, and C. Ré, “Snorkel: Rapid training data creation with weak supervision,” *PVLDB*, vol. 11, no. 3, pp. 269–282, 2017. **Best of VLDB 2018.**

S. H. Bach, B. He, A. J. Ratner, and C. Ré, “Learning the structure of generative models without labeled data,” in *International Conference on Machine Learning (ICML)*, 2017.

H. Lakkaraju, S. H. Bach, and J. Leskovec, “Interpretable decision sets: A joint framework for description and prediction,” in *ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD)*, 2016.

S. H. Bach*, B. Huang*, J. Boyd-Graber, and L. Getoor, “Paired-dual learning for fast training of latent variable hinge-loss MRFs,” in *International Conference on Machine Learning (ICML)*, 2015.

S. H. Bach, B. Huang, and L. Getoor, “Unifying local consistency and MAX SAT relaxations for scalable inference with rounding guarantees,” in *Artificial Intelligence and Statistics (AISTATS)*, 2015.

Selected for oral presentation, 6% of submitted papers (27/442).

G. Farnadi, S. H. Bach, M. Blondeel, M.-F. Moens, L. Getoor, and M. De Cock, “Statistical relational learning with soft quantifiers,” in *International Conference on Inductive Logic Programming (ILP)*, 2015. **Best Student Paper Award**.

S. H. Bach, B. Huang, B. London, and L. Getoor, “Hinge-loss Markov random fields: Convex inference for structured prediction,” in *Uncertainty in Artificial Intelligence (UAI)*, 2013.

S. H. Bach, M. Broeckeler, L. Getoor, and D. P. O’Leary, “Scaling MPE inference for constrained continuous Markov random fields with consensus optimization,” in *Advances in Neural Information Processing Systems (NIPS)*, 2012.

S. H. Bach and M. A. Maloof, “A Bayesian approach to concept drift,” in *Advances in Neural Information Processing Systems (NIPS)*, 2010.

S. H. Bach* and M. A. Maloof*, “Paired learners for concept drift,” in *IEEE International Conference on Data Mining (ICDM)*, 2008.

Demonstrations

P. Yu and S. H. Bach, “Alfred: A system for prompted weak supervision,” in *Meeting of the Association for Computational Linguistics (ACL)*, 2023.

S. H. Bach*, V. Sanh*, Z.-X. Yong, A. Webson, C. Raffel, N. V. Nayak, A. Sharma, T. Kim, M. S. Bari, T. Fevry, Z. Alyafeai, M. Dey, A. Santilli, Z. Sun, S. Ben-David, C. Xu, G. Chhablani, H. Wang, J. A. Fries, M. S. Al-shaibani, S. Sharma, U. Thakker, K. Almubarak, X. Tang, D. Radev, M. T.-J. Jiang, and A. M. Rush, “PromptSource: An integrated development environment and repository for natural language prompts,” in *Meeting of the Association for Computational Linguistics (ACL)*, 2022.

A. J. Ratner, S. H. Bach, H. E. Ehrenberg, and C. Ré, “Snorkel: Fast training set generation for information extraction,” in *ACM SIGMOD Conference on Management of Data (SIGMOD)*, 2017.

Workshop Papers

Z.-X. Yong, C. Menghini, and S. H. Bach, “Low-resource languages jailbreak GPT-4,” in *NeurIPS Workshop on Socially Responsible Language Modelling Research (SoLaR)*, 2023. **Best Paper Award (1/121).**

N. Nayak, Y. Nan, A. Trost, and S. H. Bach, “Learning to generate instructions to adapt language models to new tasks,” in *NeurIPS Workshop on Instruction Tuning and Instruction Following*, 2023.

J. Su*, P. Yu*, J. Zhang, and S. H. Bach, “Structure discovery in prompted weak supervision,” in *NeurIPS Workshop on Efficient Natural Language and Speech Processing*, 2023.

J. Dai, S. Upadhyay, S. H. Bach, and H. Lakkaraju, “What will it take to generate fairness-preserving explanations?,” in *ICML Workshop on Theoretic Foundation, Criticism, and Application Trend of Explainable AI*, 2021.

E. Raisi and S. H. Bach, “Selecting auxiliary data using knowledge graphs for image classification with limited labels,” in *CVPR Workshop on Visual Learning with Limited Labels*, 2020.

R. Patel, S. H. Bach, and E. Pavlick, “Learning visually grounded representations with sketches,” in *ICML Workshop on New Tasks for Vision and Language*, 2019.

S. H. Bach, B. Huang, and L. Getoor, “Rounding guarantees for message-passing MAP inference with logical dependencies,” in *NIPS Workshop on Discrete and Combinatorial Problems in Machine Learning (DISCML)*, 2014.

S. H. Bach, B. Huang, and L. Getoor, “Probabilistic soft logic for social good,” in *KDD Workshop on Data Science for Social Good*, 2014.

G. Farnadi, S. H. Bach, M. Moens, L. Getoor, and M. De Cock, “Extending PSL with fuzzy quantifiers,” in *International Workshop on Statistical Relational Artificial Intelligence (StaRAI)*, 2014.

S. H. Bach, B. Huang, and L. Getoor, “Large-margin structured learning for link ranking,” in *NIPS Workshop on Frontiers of Network Analysis: Methods, Models, and Applications*, 2013.
Best Student Paper Award.

S. H. Bach, B. Huang, and L. Getoor, “Learning latent groups with hinge-loss Markov random fields,” in *ICML Workshop on Inferning: Interactions between Inference and Learning*, 2013.

B. London, S. Khamis, S. H. Bach, B. Huang, L. Getoor, and L. Davis, “Collective activity detection using hinge-loss Markov random fields,” in *CVPR Workshop on Structured Prediction: Tractability, Learning and Inference*, 2013.

A. Kimmig, S. H. Bach, M. Broeckeler, B. Huang, and L. Getoor, “A short introduction to probabilistic soft logic,” in *NIPS Workshop on Probabilistic Programming: Foundations and Applications*, 2012.

B. Huang, S. H. Bach, E. Norris, J. Pujara, and L. Getoor, “Social group modeling with probabilistic soft logic,” in *NIPS Workshop on Social Network and Social Media Analysis: Methods, Models, and Applications*, 2012.

A. Memory, A. Kimmig, S. H. Bach, L. Raschid, and L. Getoor, “Graph summarization in annotated data using probabilistic soft logic,” in *Proceedings of the International Workshop on Uncertainty Reasoning for the Semantic Web (URSW)*, 2012.

S. H. Bach, M. Broeckeler, S. Kok, and L. Getoor, “Decision-driven models with probabilistic soft logic,” in *NIPS Workshop on Predictive Models in Personalized Medicine*, 2010.

* Equal Contributors

Invited Talks

Planetarium: A Rigorous Benchmark for Translating Text to Structured Planning Languages
 Computer Science Department, University of Rhode Island

Apr. 18 2025

It's All About Data: The Promises and Limitations of Recent Developments in AI
 AI Big Data Forum, University of Rhode Island
 Artificial Intelligence/Human Intelligence & Immunoinformatics Workshop, EpiVax

Nov. 22 2024

Jun. 13 2024

Data-Centric Approaches to Building on Foundation Models
 Enterprise LLM Summit: Building GenAI with Your Data, Snorkel AI
 Government Services Administration Community of Practice: Artificial Intelligence
 Dept. of Homeland Security Joint IF and Software Cost Forum
 Sharif University of Technology, International Campus, Kish Island
 Google AdsML Summit

Jan. 25 2024

Nov. 16 2022

Sep. 13 2022

Dec. 20 2021

Nov. 10 2021

Using Knowledge Graphs to Learn with Fewer Labels
 AAAI Workshop on Graphs for Learning and Reasoning (GCLR)
 Google Tech Talk Series

Feb. 9 2021

Sep. 29 2020

Weakly Supervised Machine Learning at Industrial Scale
 ACM/IEEE Computer Society Boston Chapter Joint Seminar Series
 University of Massachusetts, Lowell, Computer Science Department

Jun. 20 2019

Oct. 16 2019

Programming Statistical Machine Learning with High-Level Knowledge
 University of Chicago, Computer Science Department

Apr. 11 2018

Harvard University, Computer Science Department	Apr. 5 2018
Northeastern University, College of Computer and Info. Science	Apr. 3 2018
University of Pennsylvania, Computer Science Department	Mar. 28 2018
Rutgers University, Computer Science Department	Mar. 26 2018
Brown University, Computer Science Department	Mar. 19 2018
University of Massachusetts Amherst, College of Info. and Computer Sciences	Feb. 26 2018
Duke University, Computer Science Department	Feb. 21 2018
Dartmouth College, Computer Science Department	Feb. 16 2018
University of California, Irvine, Computer Science Department	Feb. 13 2018
Purdue University, Computer Science Department	Feb. 8 2018
<i>Snorkel: Creating Noisy Training Data to Overcome Machine Learning's Biggest Bottleneck</i>	
AAAI Symposium: Towards AI for Collaborative Open Science	Mar. 26 2019
University of California, Berkeley, Berkeley AI Research Lab	Jul. 10 2017
SIGMOD Workshop on Data Management for End-to-End Machine Learning (DEEM)	May 14 2017
<i>Probabilistic Soft Logic: Scaling Up Logical Reasoning in Statistical Machine Learning</i>	
CSLI Workshop on Logic, Rationality, and Intelligent Interaction	Jun. 2 2018
University of California, Santa Cruz, Computer Science Department	Mar. 4 2016
Stanford University, InfoLab, Computer Science Department	Feb. 11 2015
University of California, San Diego, San Diego Supercomputer Center	Feb. 9 2015
Charles River Analytics, Cambridge, MA	Aug. 20 2014

Invited Panels

<i>Learning in the Presence of Label Scarcity</i> . NorthEast Computational Health Summit	Apr. 26 2019
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Honors and Awards

Larry S. Davis Doctoral Dissertation Award
2015, Computer Science Department, University of Maryland, College Park

Teaching

Machine Learning
CSCI 1420, Brown University
Spring 2019–2025

Learning with Limited Labeled Data
CSCI 2952-C, Brown University
Fall 2018, 2020, 2022

Professional Activities

Workshop Organizer

2019 ICLR Workshop on Learning with Limited Labeled Data: Weak Supervision and Beyond
2017 NIPS Workshop on Learning with Limited Labeled Data: Weak Supervision and Beyond

National Science Foundation Peer Review Panelist

Division of Information and Intelligent Systems (IIS)

Conference Area Chair / Senior Program Committee / Meta-Reviewer

Artificial Intelligence and Statistics (AISTATS)
Conference on Language Modeling (COLM)
International Conference on Learning Representations (ICLR)
International Conference on Machine Learning (ICML)
International Joint Conference on Artificial Intelligence (IJCAI)
Neural Information Processing Systems (NeurIPS)

Conference Program Committee / Reviewer

ACL Rolling Review (ARR)

Automatic Knowledge Base Construction (AKBC)
International Conference on Learning Representations (ICLR)
International Conference on Machine Learning (ICML)
International Joint Conference on Artificial Intelligence (IJCAI)
International World Wide Web Conference (WWW)
Neural Information Processing Systems (NeruIPS)
SIGKDD Conference on Knowledge Discovery and Data Mining (KDD)
Uncertainty in Artificial Intelligence (UAI)

Journal Reviewer

ACM Transactions on Knowledge Discovery in Data (TKDD)
Data Mining and Knowledge Discovery
IEEE Transactions on Knowledge and Data Engineering (TKDE)
IEEE Transactions on Pattern Analysis and Machine Intelligence (PAMI)
Journal of Machine Learning Research (JMLR)
Science Advances
Statistical Analysis and Data Mining

Workshop Program Committee

Artificial Intelligence for Humanitarian Assistance and Disaster Response
Data Driven Discovery of Models (D3M)
Declarative Learning Based Programming (DeLBP)
Knowledge Base Construction, Reasoning and Mining (KBCOM)
Mining and Learning with Graphs (MLG)

Selected Department and University Service

Committee Member

2018–2023 Computer Science Ph.D. Admissions Committee
2023–2024 Chair, Computer Science Ph.D. Admissions Committee
2018–2022 University Goldwater Scholarship Committee
2021–2023 Computer Science Lecturer Search Committee
2025– Computer Science Master’s Admissions Committee
2022– Co-Chair, Data Science Institute Campus Advisory Board

Grants

Tasks Algorithmically Given Labels Established via Transferred Symbols
DARPA, \$2,800,000
Co-PI, Approximate Usage: 50%
7/2019–6/2023
PI: Michael Littman
Other Co-PIs: Eli Upfal, James Tompkin

Weakly Supervised Security Event Detection
Cisco, Inc., \$300,000
PI, Usage: 100%
8/2020–7/2024

EAGER: SaTC-EDU: Adversarial Thinking Early and Often
NSF, \$297,881
Co-PI, Approximate Usage: 5%
9/2020–8/2023
PI: Malte Schwarzkopf
Other Co-PIs: Timothy Nelson, Shriram Krishnamurthi, Kathryn Fisler

Social Media, Violence, and Social Isolation Among At-Risk Adolescents: Exploring Ground Truth
NIH, \$3,384,049
Co-PI, Approximate Usage: 10%

9/2020–8/2025

PIs: Nicole Nugent and Megan Ranney
Other Co-PI: Jeff Huang

Collaborative Research: 21 cm Reionization Science with the MWA

NSF, \$534,990
Co-PI, Approximate Usage: 10%
9/2021–8/2025
PI: Jonathan Pober

Collaborative Research: SWIFT-SAT: RFI Detection Across Six Orders of Magnitude in Intensity: A Unifying Framework with Weakly Supervised Machine Learning

NSF, \$620,016
PI, Approximate Usage: 70%
9/2022–8/2026
Co-PI: Jonathan Pober

CAIG: Navigating the Climate Science Deluge: Training Language Models to Assist in Comprehensive Assessments

NSF, \$660,984
PI, Approximate Usage: 90%
10/2024–9/2027
Co-PI: Baylor Fox-Kemper

Theme 3: AI Research Institute on Interaction for AI Assistants (ARIA)

NSF, \$20,000,000
Senior Personnel, Approximate Usage: 3%
10/2025–9/2030
PI: Ellie Pavlick

CDS&E: Finding the Physics that Matters: A New Framework for Interpretable and Robust Predictive Models for Astrophysics and Cosmology

NSF, \$582,954
Co-PI, Approximate Usage: 50%
10/2025–9/2028
PI: Jonathan Pober

Corporate Gifts

Google – \$70,000
10/2018

Google – \$70,000
8/2020

Google – \$50,000
9/2021

Cognex – \$37,500
1/2024

Advising

Ph.D. Alumni (Year, Next Position)
Nihal Nayak (2025, Postdoc at Harvard)
Peilin Yu (2025, Apple)

Postdoc Alumni (Year, Next Position)
Cristina Menghini (2024, Scale AI)

Current Ph.D. Students
Reza Esfandiarpoor

Yeganeh Kordi
Aidan LaBella
Francisco Piedrahita-Velez (Co-advised with Michael Littman)
Jasper Solt (Physics Ph.D. co-advised with Jonathan Poer)
Zheng-Xin Yong
Max Zuo (Co-advised with Michael Littman)

September 5, 2025