Ethan R. Elenberg, Ph.D.

CONTACT INFORMATION

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OBJECTIVE

Full-time research position in the areas of large language models, NLP, large-scale optimization, and/or machine learning.

EDUCATION

The University of Texas at Austin, Austin, TX
- ◇ Ph.D., Electrical and Computer Engineering, May 2018
- ◇ M.S., Electrical and Computer Engineering, May 2014 GPA: 3.9/4.0
  - – Dissertation: Graph Analytics and Subset Selection Problems in Machine Learning
  - – Research Supervisors: Sriram Vishwanath and Alexandros G. Dimakis
  - – Academic Track: Communications, Networks, and Systems (CommNetS)

The Cooper Union for the Advancement of Science and Art, New York, NY
- ◇ B.E., Electrical Engineering, *Summa Cum Laude*, May 2012 GPA: 4.0/4.0
  - – Signal Processing & Communications Track
  - – Minor in Mathematics

SELECTED WORK EXPERIENCE

Research Scientist, ASAPP *June 2018 - Present*
- ◇ Prototype in-house and OpenAI models for natural language processing applications, including text classification, summarization, question answering, and dialog systems.
- ◇ Drive feature improvements for AutoAssist, AutoCompose, and CoachingAI products.
- ◇ Conduct pure research in areas such as in-context learning, reinforcement learning, multi-domain language models, and classification with noisy labels.
- ◇ Develop processes for sourcing, interviewing, and hiring intern/full-time candidates.

Teaching Assistant, The University of Texas *January 2018 - May 2018*
- ◇ Assisted with course planning, assignments, project supervision, and evaluation.
- ◇ Presented material in guest lectures.

Graduate Research Assistant, The University of Texas *August 2013 - December 2017*
- ◇ Design distributed approximation algorithms for subgraph counting and graph analytics.
- ◇ Establish performance guarantees for nonlinear, large-scale greedy feature selection.
- ◇ Develop interpretability measures for black-box models via combinatorial optimization.

Summer Intern, Twitter *Summer 2017*
- ◇ Designed and evaluated hashing algorithms to estimate local subgraph features.
- ◇ Improved machine learning pipelines for sending personalized email recommendations.

Summer Research Intern, MIT Lincoln Laboratory *Summer 2014, Summer 2012*
- ◇ Formulated and developed novel entropy-based autofocus algorithms for nearfield SAR.
- ◇ Implemented extended and unscented Kalman filters in MATLAB for passive target tracking applications.
- ◇ Developed and tested a proof-of-concept passive RF direction finding circuit.

Wireless Intern, Apple *Summer 2013*
- ◇ Developed an EVM analysis tool for cellular QPSK signals.
- ◇ Provided factory support during an iPhone build.

TECHNICAL SKILLS

Programs: Cygwin, Git, IntelliJ, MATLAB, Spark, Xcode, Xilinx ISE, Unix Shell, VS Code

Languages: C, C++, CUDA C HTML, LaTeX, Objective C, PIC assembly, Python, R, Scala

Frameworks: Athena, Flask, Gradio, Huggingface Datasets/Transformers, Keras, MLflow, NumPy, Pandas, Posit Connect, PyTorch, Scalding, scikit-learn, Streamlit, TensorFlow

TECHNICAL SKILLS (CONTINUED)

Algorithms: Autoregressive language modeling, backprojection imaging, beam search, correlation clustering, CoSaMP, gradient boosted decision trees, graph-based visual saliency, greedy forward regression, episodic sampling, epsilon-greedy, k-means clustering, linear discriminant analysis, locality sensitive hashing, Luby transform coding, nonlinear Kalman filtering, nucleus sampling, 802.11 Physical Layer, Q-learning, Riemannian optimization, sparse PCA, stochastic gradient descent, support vector machines, triangle counting

Security Clearance: Last active August 2014, information available upon request

SELECTED PUBLICATIONS AND PRESENTATIONS

S. Gupta, C. Rosenbaum, and **E.R. Elenberg**. "GistScore: Learning Better Representations for In-Context Example Selection with Gist Bottlenecks", November 2023.

L. Mualem, **E.R. Elenberg**, M. Feldman, and A. Karbasi. "Submodular Minimax Optimization: Finding Effective Sets", in *Proc. AISTATS*, May 2024 (to appear).

A. Kabra and **E.R. Elenberg**. "Domain Private Transformers for Multi-Domain Dialog Systems", in *Findings of EMNLP*, December 2023.

P. Sodhi, F. Wu, **E.R. Elenberg**, K.Q. Weinberger, and R. McDonald. "On the Effectiveness of Offline RL for Dialogue Response Generation", in *Proc. ICML*, July 2023.

N. Nayak, **E.R. Elenberg**, and C. Rosenbaum. "CEREAL: Few-Sample Clustering Evaluation", September 2022.

G. Pleiss, T. Zhang, **E.R. Elenberg**, and K.Q. Weinberger. "Identifying Mislabeled Data using the Area Under the Margin Ranking", in *Proc. NeurIPS*, December 2020.

J. Wohlwend, **E.R. Elenberg**, S. Altschul, S. Henry, and T. Lei. "Metric Learning for Dynamic Text Classification", in *Proc. EMNLP Workshop on Deep Learning for Low-Resource NLP (DeepLo)*, November 2019. **Oral Presentation**.

E.R. Elenberg, R. Khanna, A.G. Dimakis, and S. Negahban. "Restricted Strong Convexity Implies Weak Submodularity", in *The Annals of Statistics*, vol. 46(6B), 3539–3568, 2018.

E.R. Elenberg, A.G. Dimakis, M. Feldman, and A. Karbasi. "Streaming Weak Submodularity: Interpreting Neural Networks on the Fly", in *Proc. NeurIPS*, 2017. **Oral Presentation**.

R. Khanna, **E.R. Elenberg**, A.G. Dimakis, S. Negahban, and J. Ghosh. "Scalable Greedy Feature Selection via Weak Submodularity", in *Proc. AISTATS*, April 2017.

E.R. Elenberg, K. Shanmugam, M. Borokhovich, and A.G. Dimakis. "Distributed Estimation of Graph 4-profiles", in *Proc. WWW*, April 2016.

"Autoencoders," ECE471: Selected Topics in Machine Learning, The Cooper Union, Fall 2019. Guest Lecture.

"Submodular Maximization, Relaxations, and Applications," EE381V: Topics in Unsupervised Learning, UT Austin, Spring 2018. Guest Lecture.

"Streaming Weak Submodularity: Interpreting Neural Networks on the Fly", *Texas A&M University Information Science and Systems Seminar*, College Station TX, Fall 2017.

"Machine Learning on Graphs: Profiles and Greedy Approximation", *2017 SIAM Conference on Optimization*, Vancouver, BC. Invited Speaker.

SELECTED HONORS AND AWARDS

NeurIPS Reviewer Award	2018-2019, 2022
ICLR Outstanding Reviewer	2021
ICML Student Travel Award	2017
Cockrell School Fellowship	2012-2016
Microelectronics & Computer Development Fellowship	2012-2013
Cooper Union Full Tuition Scholarship	2008-2012