

NAOMI SAPHRA

Gradient Descent Spectator

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github.com/nsaphra



WORK EXPERIENCE

Postdoctoral Researcher

NYU

2021 - present

New York, New York

- Supervisor: Kyunghyun Cho.

NLP Consultant

MosaicML

2022

New York, New York

- Advised R&D on efficient NLP training.

Research Intern

Google

Winter 2020

New York, New York

- Supervisors: Dipanjan Das (Language, Google AI), Ian Tenney, Jasmijn Bastings, Thibault Sellam.
- Better understanding of how BERT learns.

Contractor

Koko

Summer 2017

New York, New York

- Developed neural classifiers for informal text at anti-abuse startup.

Software Engineering Intern

Google

Summer 2013 & 2015

Mountain View, California

- Supervisor: Marius Pasca (Common Sense, Machine Intelligence).
- Unsupervised discovery of paraphrases of compositional noun phrases.
- Supervisor: Eric Altendorf (Common Sense, Machine Intelligence).
- Integrated models of real-world knowledge into entity linking.

Undergraduate Research Fellow

CLSP Summer Workshop at Johns Hopkins University

Summer 2012

Baltimore, Maryland

- Supervisor: Matthew Blaschko.
- Unsupervised methods to verify image annotations.

Engineering Intern

Facebook

Summer 2011

Palo Alto, California

- Supervisor: Jen Burge (Engagement Team).
- Engineered new features for the People You May Know model.

EDUCATION

Ph.D. in Informatics

Edinburgh University

2021

Supervisor: Adam Lopez.
Thesis: Training Dynamics of Neural Language Models.

M.Sc. in Computer Science

Johns Hopkins University

2015

B.Sc. in Computer Science

Carnegie Mellon University

2013

Minor in Language Technologies

Sabbatical

The Recurse Center

2017

Unstructured programming retreat.

AWARDS

- ICLR outstanding reviewer 2021, 2022.
- New York Academy of Sciences - Natural Language, Dialogue and Speech Symposium: Best Poster Runner Up.
- Daniella Sciamma Award for Achievement through Adversity 2019.
- Google Europe Scholarship for Students with Disabilities 2017.
- Carnegie Mellon School of Computer Science Dragon Award 2013.
- National Merit Semifinalist 2009.
- Nannina Rasulo Memorial Scholarship Award for Technology 2009.

SKILLS & HOBBIES

Python

C++

spacy

pytorch

NLP

pretraining

interpretability

Roller Derby

Standup

Clown

SELECTED PUBLICATIONS

Conference Proceedings

- Sellam, Thibault et al. (2022). "The MultiBERTs: BERT Reproductions for Robustness Analysis". In: *ICLR*.
- Valvoda, Josef et al. (2022). "Learning Transductions to Test Systematic Compositionality". In: *COLING*.
- White, Jennifer C. et al. (2021). "A Non-Linear Structural Probe". In: *NAACL*.
- Pimentel, Tiago et al. (2020). "Pareto Probing: Trading Off Accuracy for Complexity". In: *EMNLP*.
- Saphra, Naomi and Adam Lopez (2020). "LSTMs Compose—and Learn—Bottom-Up". In: *Findings of EMNLP*.
- Saphra, Naomi and Lopez, Adam (2019). "Understanding Learning Dynamics Of Language Models with SVCCA". in: *NAACL*.
- Saphra, Naomi and Adam Lopez (2015). "AMRICA: an AMR Inspector for Cross-language Alignments". In: *NAACL*.

Workshop Proceedings

- Juneja, Jeevesh et al. (2022). "Linear Connectivity Reveals Generalization Strategies". In: *ICML Workshop on Spurious Correlations, Invariance, and Stability*.
- Saphra, Naomi and Adam Lopez (2019). "Sparsity Emerges Naturally in Neural Language Models". In: *ICML Workshop on Identifying and Understanding Deep Learning Phenomena*.
- Saphra, Naomi and Lopez, Adam (2016). "Evaluating Informal-Domain Word Representations With UrbanDictionary". In: *ACL Workshop on Evaluating Vector Space Representations for NLP*.
- Cotterell, Ryan et al. (2014). "An Algerian Arabic-French Code-Switched Corpus". In: *LREC Workshop on Free/Open-Source Arabic Corpora*.
- Schneider, Nathan et al. (2014). "A framework for (under) specifying dependency syntax without overloading annotators". In: *ACL Linguistic Annotation Workshop*.

SERVICE

Organizing Committee

ACL Workshop on Representation Learning for NLP

 2021, 2023

Organizing Committee

EMNLP Workshop on analyzing and interpreting neural nets for NLP

 2022

Area Chair

EMNLP and AACL

 2021, 2021

ACL Accessibility Subcommittee

Association for Computational Linguistics

 2020  Seattle, WA

Communications committee

Auld Reekie Roller Derby

 2017 – 2019  Edinburgh, UK

Puzzle tester and local organizer

North American Computational Linguistics Olympiad

 2012 – 2014

TEACHING

Project Supervisor

NYU

 2021

Machine Learning MS Capstone

Tutor

University of Edinburgh

 2016 – 2019

Informatics Research Review
Probabilistic Modeling & Reasoning
Machine Learning & Pattern Recognition

Course Assistant

Johns Hopkins University

 2013

Natural Language Processing

Teacher's Assistant

Irvington High School

 2008 – 2009

Ancient Greek

INVITED TALKS

Sources of Variance in Pretraining and Finetuning (Keynote)

3rd Neural Scaling Laws Workshop

 June 2022  Quebec


Learning Dynamics of LMs

UC Berkeley

 November 2020  Berkeley, CA

Transparent, Hackable, Accessible

QueerInAI EMNLP Social

 November 2020  Remote (EMNLP)

Learning Dynamics of LSTMs

NLP with Friends

 October 21, 2020  Remote

Accessible Means Hackable (Keynote)

Pydatafest Amsterdam

 June 15, 2020  Amsterdam, Netherlands

Blackbox NLP Panel Discussion

ACL Blackbox NLP Workshop

 Aug 1, 2019  Florence, Italy

Paying the Panopticon (standup)

The Stand Edinburgh Comedy Club

 Feb 26, 2019  Edinburgh, UK