

# NAOMI SAPHRA

AI Optimistic Pessimist

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@nsaphra

github.com/nsaphra



## WORK EXPERIENCE

Postdoctoral Researcher

NYU

2021

New York, New York

- Supervisor: Kyunghyun Cho.

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 2015

Mountain View, California

- Supervisor: Marius Pasca (Common Sense, Machine Intelligence).
- Unsupervised discovery of paraphrases of compositional noun phrases.

Software Engineering Intern

Google

Summer 2013

Mountain View, California

- 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 2021 outstanding reviewer.
- New York Academy of Sciences - Natural Language, Dialogue and Speech Symposium: Best Poster Runner Up.
- Daniella Sciama 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

- 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*.
- Vedaldi, Andrea et al. (2014). "Understanding Objects in Detail with Fine-grained Attributes." In: *CVPR*.

### Workshop Proceedings

- 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*.
- Saphra, Naomi and Raman Arora (2015). "Domain Adaptation for Word Embeddings With Matrix Factorization". In: *Women in Machine Learning Workshop at NIPS*.
- 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*.
- Saphra, Naomi and Matthew Blaschko (2012). "Automatic verification of boundary annotations from mechanical turk". In: *Women in Machine Learning Workshop at NIPS*.

## SERVICE

### Organizing Committee

**5th Workshop on analyzing and interpreting neural networks for NLP**

 2022

### Area Chair

**EMNLP**

 2021

### Organizing Committee

**6th Workshop on Representation Learning for NLP**

 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

### 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

### NLP/ML Instructor & Course Designer

**Carnegie Mellon TechNights (outreach for middle school girls)**

 2013

 Pittsburgh, Pennsylvania

### Teacher's Assistant

**Irvington High School**

 2008 – 2009

Ancient Greek

## INVITED TALKS

### Learning Dynamics of LMs

**UC Berkeley**

 November 2020

 Providence, RI

### Transparent, Hackable, Accessible

**QueerInAI EMNLP Social**

 November 2020

 Remote (EMNLP)

### Learning Dynamics of LSTMs

**NLP with Friends**


 October 21, 2020

 Remote

### Accessible Means Hackable

**Pydatafest Amsterdam (Keynote)**

 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