E-mail: ericwallace@berkeley.edu GitHub: github.com/Eric-Wallace Web: ericswallace.com

Eric Wallace

EDUCATION UC Berkeley 2019 - Present

Ph.D. in Computer Science

GPA: 4.0/4.0

University of Maryland 2014 - 2018

B.S. in Computer Engineering

GPA: 3.9/4.0, GRE: 170/170Q, 168/170V, 6/6W

RESEARCH UC Berkeley (Berkeley NLP, RISE, BAIR) Berkeley, California Aug 2019 - Present

Research Assistant EXPERIENCE Advisors: Dan Klein, Dawn Song

> Allen Institute for Artificial Intelligence (AI2) Irvine, California

> Jan 2019 - July 2019 Research Intern

Advisors: Matt Gardner, Sameer Singh

University of Maryland, CLIP Lab College Park, MD

Undergraduate Research Assistant Jan 2018 - Dec 2018

Advisor: Jordan Boyd-Graber

Lyft, Self Driving Team Palo Alto, California Industry EXPERIENCE

Software Engineering Intern June - Aug 2018

Folsom, California Intel

Software Engineering Intern Aug - Dec 2017

Appian Reston, Virginia Software Engineering Intern May - Aug 2017

Fellowships. AWARDS & Honors

AI2 Intern of the Year, 2019 EMNLP Best Demo Award, 2019 EMNLP Travel Award 2018

EMNLP Best Reviewer Award, 2018

AIAA Student Conference Best Paper, 2017

Lockheed Martin Corporate Partners Scholarship, 2017

Yurie/Jeong H. Kim Scholarship, 2016

Leidos Corporate Partners Scholarship, 2016

University of Maryland Presidential Scholarship, 2014

Eagle Scout, 2012

Publications

- Pretrained Transformers Improve Out-of-Distribution Robustness
 Dan Hendrycks*, Xiaoyuan Liu*, Eric Wallace, Adam Dziedzic, Rishabh Krishnan, and Dawn Song.

 Association for Computational Linguistics (ACL), 2020.
- [2] Universal Adversarial Triggers for Attacking and Analyzing NLP **Eric Wallace**, Shi Feng, Nikhil Kandpal, Matt Gardner, and Sameer Singh. *Empirical Methods in Natural Language Processing (EMNLP)*, 2019.
- [3] AllenNLP Interpret: A Framework for Explaining Predictions of NLP Models Eric Wallace, Jens Tuyls, Junlin Wang, Sanjay Subramanian, Matt Gardner, and Sameer Singh. Demo at Empirical Methods in Natural Language Processing (EMNLP), 2019. Best Demo Award
- [4] Do NLP Models Know Numbers? Probing Numeracy in Embeddings Eric Wallace*, Yizhong Wang*, Sujian Li, Sameer Singh, and Matt Gardner. Empirical Methods in Natural Language Processing (EMNLP), 2019.
- [5] Misleading Failures of Partial-input Baselines Shi Feng, Eric Wallace, and Jordan Boyd-Graber. Association for Computational Linguistics (ACL), 2019.
- [6] Compositional Questions Do Not Necessitate Multi-hop Reasoning Sewon Min*, Eric Wallace*, Sameer Singh, Matt Gardner, Hannaneh Hajishirzi, and Luke Zettlemoyer. Association for Computational Linguistics (ACL), 2019.
- [7] Understanding Impacts of High-Order Loss Approximations and Features in Deep Learning Interpretation Sahil Singla, Eric Wallace, Shi Feng, and Soheil Feizi. International Conference in Machine Learning (ICML), 2019.
- [8] Trick Me If You Can: Human-in-the-loop Generation of Adversarial Examples for Question Answering Eric Wallace, Pedro Rodriguez, Shi Feng, Ikuya Yamada, and Jordan Boyd-Graber. Transactions of the Association for Computational Linguistics (TACL), 2019.
- [9] Pathologies of Neural Models Make Interpretations Difficult Shi Feng, Eric Wallace, Alvin Grissom II, Mohit Iyyer, Pedro Rodriguez, and Jordan Boyd-Graber. Empirical Methods in Natural Language Processing (EMNLP), 2018.
- [10] Interpreting Neural Networks With Nearest Neighbors Eric Wallace*, Shi Feng*, and Jordan Boyd-Graber. EMNLP Workshop on Analyzing and Interpreting Neural Networks (BlackboxNLP), 2018.

TEACHING EXPERIENCE EMNLP 2020 Tutorial - Interpreting Predictions of NLP Models

Sameer Singh, Matt Gardner, Eric Wallace

A tutorial on interpretability methods for NLP, e.g., saliency maps, input perturbations (LIME, input reduction, Anchors), and adversarial attacks (SEARs, universal adversarial triggers).

November 2020

MENTORING

Tony Zhao (2020-Present), UC Berkeley Undergraduate. Albert Xu (2020-Present), UC Berkeley Undergraduate.

Nikhil Kandpal (2019-Present), Independent Researcher. Published [2]. Now PhD Student at UNC. Jens Tuyls (2019-2020), UC Irvine Undergraduate. Published [3]. Now PhD Student at Princeton. Junlin Wang (2019-2020), UC Irvine Undergraduate. Published [3]. Now Research Assistant at UC Irvine.

Talks

November 2019. Universal Adversarial Triggers for Attacking and Analyzing NLP. Empirical Methods in Natural Language Processing (EMNLP) in Hong Kong.

November 2018. Pathologies of Neural Models Make Interpretation Difficult. Empirical Methods in Natural Language Processing (EMNLP) in Brussels, Belgium.

March 2018. Generalization in Deep Learning for Language. Adobe Labs & UMD Computer Science Advisory Board in College Park, MD.

November 2017. Learning Macro-Based RL Policies. DeepMind/Blizzard StarCraft AI Workshop in Anaheim, CA.

ACADEMIC SERVICE Program Committee Member

- Association for Computational Linguistics (ACL): 2020
- Empirical Methods in Natural Language Processing (EMNLP): 2020, 2019, 2018 (Best Reviewer Award).
- Workshop on NLP for Positive Impact: 2020
- International Workshop on Semantic Evaluation (SemEval): 2018

OPEN SOURCE SOFTWARE

AllenNLP (Contributor)

A software library with abstractions for NLP research, written on top of PyTorch. Developer of the AllenNLP Interpretation Toolkit [3] ($EMNLP\ 2019\ Best\ Demo$).

Press & Media

Universal Adversarial Triggers for Attacking and Analyzing NLP [2], <u>Twitter</u>, <u>Wired</u>, <u>qbitai</u>, <u>Synced</u>, NLP Newsletter.

AllenNLP Interpret: A Framework for Explaining Predictions of NLP Models [3], <u>Twitter</u>, <u>InfoQ</u>, <u>UC Irvine</u>, <u>NLP Newsletter</u>

Do NLP Models Know Numbers? Probing Numeracy in Embeddings [4] <u>Twitter</u>.

Trick Me If You Can: Human-in-the-loop Generation of Adversarial Examples for Question Answering [8], Front page of Reddit, Dukakis Shaping Futures, UMD Press Release, UMD Podcast, AI2 NLP Highlights Podcast.

Pathologies of Neural Models Make Interpretations Difficult [9]. <u>AI2 NLP Highlights Podcast</u>, <u>TWiML Talk Podcast</u>, <u>UCI NLP</u>, <u>UMD</u>.

Interpreting Neural Networks with Nearest Neighbors [10]. UCI NLP