

# EMILY SHENG

ewsheng at gmail · <https://ewsheng.github.io>

## EDUCATION

### PH.D. IN COMPUTER SCIENCE

Aug 2015 – Aug 2021

*University of Southern California*

Advisors: Dr. Prem Natarajan and Dr. Nanyun Peng

Research interests: fairness in natural language processing, language generation, dialogue systems

### M.S. IN COMPUTER SCIENCE

Aug 2015 – May 2017

*University of Southern California*

### B.A. IN COMPUTER SCIENCE, COGNITIVE SCIENCE

Aug 2010 – May 2014

*University of California, Berkeley*

## PROFESSIONAL EXPERIENCE

### SR SCIENTIST

May 2022 –

*Microsoft Research*

*Seattle, WA*

Identify, measure, and mitigate fairness-related harms in language technologies.

### MACHINE LEARNING ENGINEER

July 2021 – May 2022

*Twitter*

*Los Angeles, CA*

Improve content health & fairness of the platform.

### RESEARCH INTERN

May 2019 – April 2020

*Google*

*Mountain View, CA*

Evaluate and mitigate biases towards different demographics in a poetry composition system.

### SOFTWARE ENGINEERING INTERN

May 2018 – Aug 2018

*Google*

*Mountain View, CA*

Evaluate textual similarity across text lengths for bag-of-words and convolutional neural network model variants.

### SOFTWARE ENGINEER

July 2014 – July 2015

*Expect Labs*

*San Francisco, CA*

Prototype classifier for domain-specific named entity recognition to improve a natural language understanding system, and full-stack development of developer platform tools.

## SELECTED PUBLICATIONS

Dev, S. \*, Sheng, E. \*, Zhao, J. \*, Amstutz, A. \*, Sun, J., Hou, Y., Sanseverino, M., Kim, J., Peng, N., Chang, K. -W. (2022). On Measures of Biases and Harms in NLP. In *Proceedings of ACL-IJCNLP-Findings 2022*.

Sheng, E. (Aug 2021). Fairness in Natural Language Generation. *PhD Thesis*.

Sheng, E., Chang, K.-W., Natarajan, P., Peng, N. (2021). Societal Biases in Language Generation: Progress and Challenges. In *Proceedings of ACL 2021*.

Sheng, E., Chang, K.-W., Natarajan, P., Peng, N. (2021). “Nice Try, Kiddo”: Investigating Ad Hominems in Dialogue Responses. In *Proceedings of NAACL 2021*.

Sheng, E., Arnold, J., Yu, Z., Chang, K.-W., Natarajan, P., & Peng, N. (2021). Revealing Persona Biases in Dialogue Systems. *arXiv preprint arXiv:2104.08728*.

Sheng, E., Chang, K.-W., Natarajan, P., Peng, N. (2020). Towards Controllable Biases in Language Generation. In *Proceedings of EMNLP-Findings 2020*.

Sheng, E., & Uthus, D. (2020). Investigating Societal Biases in a Poetry Composition System. In *Proceedings of the 2<sup>nd</sup> Gender Bias in NLP Workshop*.

Sheng, E., Chang, K.-W., Natarajan, P., Peng, N. (2019). The Woman Worked as a Babysitter: On Biases in Language Generation. In *Proceedings of EMNLP 2019*.

## RESEARCH EXPERIENCE

**USC / ISI: Natural Language Processing** Aug 2015 – Aug 2021  
*Graduate Research Assistant at University of Southern California / Information Sciences Institute*  
Evaluating and mitigating biases in language generation.

**UC Berkeley / ICSI: Resolving prepositional phrase attachment ambiguity** Jan 2014 – May 2014  
*Research project at University of California, Berkeley / International Computer Science Institute*  
Survey of lexical, semantic, and contextual methods to resolve ambiguity (adv. Dr. Jerome Feldman).

**UC Berkeley / Walker Lab: Sleep study** June 2012 – May 2013  
*Research Assistant at University of California, Berkeley*  
EEG, MRI, and behavioral tests to study effect of sleep on adolescents.

**UC Berkeley / Concepts and Cognition Lab: Yahoo Answers study** Aug 2011 – May 2013  
*Research Assistant at University of California, Berkeley*  
Extract features of up-voted Yahoo Answers to find those favored in "good" explanations.

## PROFESSIONAL ACTIVITY

**PUBLICITY CO-CHAIR** July 2021 – July 2022  
*NAACL 2022*

**SEMINAR COORDINATOR** Sept 2019 – Aug 2020  
*USC Information Sciences Institute Natural Language Seminar*  
*Marina del Rey, CA*

**STUDENT CO-CHAIR** Sept 2019  
*2019 SoCal NLP Symposium*  
*Los Angeles, CA*

**REVIEWER**  
*ACL, EMNLP, NAACL, AAI, \*SEM, SoCal NLP Symposium, TrustNLP Workshop, RAI@KDD*

## TEACHING EXPERIENCE

**TEACHING ASSISTANT** Aug 2015 – May 2016  
*Introduction to Computing course*  
*University of Southern California*