

EMILY SHENG

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Los Angeles, CA

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

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.

SOFTWARE ENGINEERING INTERN

May 2013 – Aug 2013

Samsung Telecommunications America

San Jose, CA

Build back end of an analytics prototype project.

PUBLICATIONS

Sheng, E., Chang, K.-W., Natarajan, P., Peng, N. (2021) Societal Biases in Language Generation: Progress and Challenges. To appear 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 2nd 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*.

Sheng, E., & Natarajan, P. (2018). A Byte-sized Approach to Named Entity Recognition. *arXiv preprint arXiv:1809.08386*.

Sheng, E., Miller, S., Ambite, J. L., Natarajan, P. (2017). A Neural Named Entity Recognition Approach to Biological Entity Identification. In *Proceedings of the BioCreative VI Workshop*.

Sheng, E., Natarajan, P., Gordon, J., & Burns, G. (2017). An Investigation into the Pedagogical Features of Documents. In *Proceedings of the 12th Workshop on Innovative Use of NLP for Building Educational Applications* (pp. 109-120).

Gordon, J., Aguilar, S., Sheng, E., & Burns, G. (2017). Structured generation of technical reading lists. In *Proceedings of the 12th Workshop on Innovative Use of NLP for Building Educational Applications* (pp. 261-270).

Oral presentations

Sheng, E. (2020). Fairness in Natural Language Processing. *Presented at USC / ISI Research Day 2020*.

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

Sheng, E., Miller, S., Ambite, J. L., Natarajan, P. (2017). A Neural Named Entity Recognition Approach to Biological Entity Identification. *Presented at the BioCreative VI Workshop*.

Poster presentations

Sheng, E., Chang, K.-W., Natarajan, P., Peng, N. (2020) "Nice Try, Kiddo": Investigating Ad Hominems in Dialogue Responses. *SoCal NLP Symposium 2021*.

Sheng, E., Chang, K.-W., Natarajan, P., Peng, N. (2020). Towards Controllable Biases in Language Generation. *BlackboxNLP 2020 workshop*.

Sheng, E., and Natarajan, P. (2016). An Investigation into the Pedagogical "Value" of Documents. *CRA-W Grad Cohort Workshop and ISI Graduate Student Symposium*.

RESEARCH EXPERIENCE

USC / ISI: Natural Language Processing Aug 2015 – Aug 2021

Graduate Research Assistant at University of Southern California / Information Sciences Institute

Recent work on evaluating and mitigating biases in language generation, prior work on information extraction.

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

SEMINAR COORDINATOR

USC Information Sciences Institute Natural Language Seminar

Sept 2019 – Aug 2020

Marina del Rey, CA

STUDENT CO-CHAIR
2019 SoCal NLP Symposium

Sept 2019
Los Angeles, CA

REVIEWER

**SEM 2019, SoCal NLP Symposium 2019, ACL 2020, EMNLP 2020 (Outstanding Reviewer), NAACL 2021, ACL 2021, TrustNLP workshop 2021, EMNLP 2021*

TEACHING EXPERIENCE

TEACHING ASSISTANT
Introduction to Computing course

Aug 2015 – May 2016
University of Southern California