

# Shuyang Li

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## EDUCATION

**University of California, San Diego**, San Diego, CA (PhD) Exp. 2022  
Advisor: Dr. Julian McAuley  
Area: Computer Science and Engineering, Machine Learning

**Princeton University**, Princeton, NJ (BSE) June 2016  
Major: Operations Research and Financial Engineering GPA: 3.71  
Certificates: Applications of Computing; Statistics and Machine Learning  
Thesis: *Exploring Rich Features for Sentiment Analysis with Various Machine Learning Models*

## PUBLICATIONS (\* indicates equal contribution)

Li, S., Cao, J., Sridhar, M., Zhu, H., Li, D., Hamza, W., McAuley, J. (2021). Zero-shot Generalization in Dialog State Tracking through Generative Question Answering. *EACL*

Majumder, B.\*, Li, S.\*, Ni, J., McAuley, J. (2020). Interview: Large-scale Modeling of Media Dialog with Discourse Patterns and Knowledge Grounding. *Empirical Methods in Natural Language Processing*.

Li, S. and McAuley, J. (2020). Recipes for Success: Data Science in the Home Kitchen. *Harvard Data Science Review*.

Mao, H., Li, S., McAuley, J., Cottrell, G. (2020). Speech Recognition and Multi-Speaker Diarization of Long Conversations. *INTERSPEECH*

Majumder, B.\*, Li, S.\*, Ni, J., McAuley, J. (2019). Generating Personalized Recipes from Historical User Preferences. *Empirical Methods in Natural Language Processing*.

Li, S.\*, Majumder, B.\*, McAuley, J. (2019). Cooking Common Sense: Personalized Recipe ‘Tweak’ Inference via Common Sense Reasoning. *SoCal NLP Symposium*.

Huang, D., Li, S., Dhaka, A., Story, G.M. and Cao, Y.Q. (2012). Expression of the transient receptor potential channels TRPV1, TRPA1 and TRPM8 in mouse trigeminal primary afferent neurons innervating the dura. *Molecular Pain*, 8 (1), 66–85.

## HONORS AND AWARDS

Winner, Qualcomm Innovation Fellowship 2020-2021  
“Toward Personalized and Multimodal Conversational Recommender Systems”

Finalist, Amazon Alexa Prize SocialBot Grand Challenge 3 (UCSD Team) 2019-2020

## RESEARCH AND WORK EXPERIENCE

**University of California San Diego** September 2018-Present  
*Graduate Student Researcher*

- Researching and developing models to incorporate knowledge, subjectivity, and personalization in language modeling and generation at the intersection of NLP, speech, dialog, and recommender systems
- Researcher, architect, and lead developer for the UCSD Amazon Alexa Prize Socialbot Grand Challenge team
- Teaching Assistant for CSE 158/258: Web Mining and Recommender Systems

**Amazon, Alexa Natural Language Understanding** June 2020-October 2020  
*Applied Scientist Intern (PhD)*

- Researching generative approaches toward generalizable dialog state tracking of user preferences
- Investigating knowledge transfer across document and dialog understanding tasks

- Analyzing common error modalities in preference and belief tracking for task-oriented dialog

### **Google, Kaggle Datasets (Google Cloud AI)**

June 2019-September 2019

*Software Engineering Intern (PhD)*

- Built a framework for automatically generating semantic tags for datasets based on free-text metadata
- Implemented metrics for dataset discoverability and search success
- Doubled size of tag ontology and tripled tag coverage across all public datasets on Kaggle.com

### **Bloomberg, Structured Products Waterfall**

June 2017-September 2018

*Senior Software Engineer*

- Designed and implemented a Spark-based infrastructure for high bandwidth data processing jobs
- Modeled time series data for 2.5 million asset-backed securities (ABS)
- Designed and implemented anomaly detection for ABS data passing through ETL and analytics pipelines

### **Goldman Sachs, Operations Automation and Analytics Technology**

July 2016-June 2017

*Technology Analyst*

- Helped build applications to consume, parse, & standardize market messages for fixed income instruments
- Designed & built a machine learning platform to create metrics & predictive models for Operations division

### **Princeton University, Senior Thesis Research**

September 2015-May 2016

*Senior Thesis Research*

- Investigated SVMs, Naïve Bayes, and ensemble methods for binary sentiment analysis on movie reviews
- Created a manually labeled corpus from 2004 Cornell IMDB data for subjective and summary sentences

### **Goldman Sachs, Operations Analytics Strategies**

June 2015-August 2015

*Summer Analyst*

- Led team working on automated invoice recognition using Tesseract and Python to process and automate template matching with noisy and tilted images containing structured and semi-structured text

### **Princeton Laboratory for Energy Systems Analysis / CASTLE Lab**

June 2014-August 2014

*Summer Research Intern*

- Created simulator in Java for the unit allocation problem of introduction of wind energy to the power grid
- Analyzed the role and performance of different classes of learning rates in reinforcement learning

## **INVITED TALKS**

Invited talk at Amazon San Diego about *Generalizable Dialog State Tracking*

August 2020

## **PROGRAM COMMITTEE & REVIEWER**

AAAI 2021, Workshop on Shareable NLP @ AMLC 2020, INLG 2019