Ming Sun Email: sunming1987@gmail.com Homepage: http://www.cs.cmu.edu/~mings/ Cell: 412-251-3705

Education

Carnegie Mellon University, Pittsburgh, USA
- Ph.D., Language Technologies Institute, 2016
- M.S., Language Technologies Institute, 2012
  Advisor: Alexander I. Rudnicky

Shanghai Jiao Tong University, Shanghai, China
- B.S., Electronic Engineering, 2010

Employment History

Amazon, Applied Scientist, June 2017 - present

Disney Research Pittsburgh, Post-Doctoral Associate, June 2016 – June 2017
- Learn character representations with deep neural networks
- Build conversational agent with persistent interactive personality
- Storytelling with kids

General Motors Advanced Technical Center, Israel, Summer Intern, 2013
- Extended an online spoken dialog system with offline batch simulation
- Designed and adapted finite-state grammar to improve natural language understanding

Interests

Spoken dialog systems, artificial intelligence, user adaptation, storytelling, embodied agents

Projects

Understanding User Intentions in Adaptive Spoken Dialog System, 2015 –2016
- Designed and conducted longitudinal study to collect multi-domain user intentions from smartphones
- Gamified data collection to increase the yield and protect user privacy
- Enabled the agent to understand high-level user intention from language command and automatically utilize existing domains to assist user
- Mentored two Masters students to build/integrate user intention models into smartphones

Lexicon Expansion in Spoken Dialog System, 2014
- Enabled speech recognizer to automatically grow its vocabulary
- Compared the performance of WordNet, word2vec, PPDB in lexicon enrichment

Speech Recognizer Combination/Adaptation in Spoken Dialog System, 2014
- Adapted cloud-based recognizer by combining with personalized one
- Implemented data-driven probabilistic finite-state grammar for speech recognizer

Multiparty Interaction, 2013
- Extended Olympus/Ravenclaw spoken dialog framework to handle multiparty interaction
- Designed and conducted user study investigating the system performance

Context-aware Robust Dialog in Public Spaces, 2012
- Enabled Olympus to handle visual/acoustic distractions by using multi-modal input
- Detected user's intention to converse by audio and skeleton information from Kinect
- Designed and conducted user study evaluating the system performance

Out-of-Vocabulary Words (OOV) Detection and Recovery, 2011
- Applied fragment-word hybrid language model to detect OOV words
- Trained grapheme-to-phoneme model to recover the spellings of detected OOV words
- Integrated the OOV detection/recovery model into a dialog system

Point of Interests Dialog System, 2011

- Designed and implemented an in-car dialog system to find points of interest
- Personalized the system's natural language understanding

Selected Publications

M.Sun, I. Leite, J. Lehman and B. Li, "Collaborative Storytelling with Children: A Feasibility Study", *the 16th ACM SIGCHI Interaction Design and Children Conference (**IDC**)*, 2017, Stanford University, USA.

M. Sun, A. Pappu, YN. Chen and A. I. Rudnicky, " Weakly Supervised User Intent Detection for Multi-Domain Dialogues", *IEEE Workshop on Spoken Language Technology (**SLT**)*, 2016, San Diego, USA.

M. Sun, YN. Chen and A. I. Rudnicky, "An Intelligent Assistant for High-Level Task Understanding", *the 21st ACM Conference on Intelligent User Interfaces (**IUI**)*, 2016, Sonoma, USA.

M. Sun, YN. Chen and A. I. Rudnicky, "Understanding User's Cross-Domain Intentions in Spoken Dialog Systems", *NIPS Workshop on Machine Learning for SLU and Interaction (**NIPS-SLU**)*, 2015, Montreal, Canada**.**

M. Sun, YN. Chen, A.I. Rudnicky, "Learning OOV through Semantic Relatedness in Dialog Systems", *the 16th Annual Conference of the International Speech Communication Association (**Interspeech**)*, 2015, Dresden, Germany.

A. Pappu, **M. Sun**, S. Sridharan, A. I. Rudnicky, "Situated Multiparty Interaction between Humans and Agents", *the 15th International Conference on Human-Computer Interaction (**HCII**)*, 2013, Las Vegas, USA.

L. Qin, **M. Sun**, A. I. Rudnicky, "System Combination for Out-of-vocabulary Word Detection", *the 37th International Conference on Acoustics Speech and Signal Processing (**ICASSP**)*, 2012, Kyoto, Japan.

L. Qin, **M. Sun**, A. I. Rudnicky, "OOV Detection and Recovery Using Hybrid Models with Different Fragments", *the 12th Annual Conference of the International Speech Communication Association (**Interspeech**)*, 2011, Florence, Italy.

Honors and Awards

YAHOO! Fellowship, 2015 and 2016
Bosch Fellowship Finalist, 2013
Academic Excellence Scholarship, Shanghai Jiao Tong University, 2007-2009
Merit Student Award, Shanghai Jiao Tong University, 2007

Academic Service

Conference Reviewer: IUI, ICMI, LREC, Mobile-HCI, CHI, HRI
Journal Reviewer: Dialogue & Discourse

Computer Skills

Programming Languages: Python, Lua, C++
Machine Learning Tools: Torch, scikit-learn