

TSUNG-HSIEN WEN

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RESEARCH INTERESTS Spoken Dialogue Systems, Natural Language Generation, Natural Language Processing, Distributed Semantics, Spoken Language Understanding

EDUCATION

UNIVERSITY OF CAMBRIDGE	CAMBRIDGE, UK
PhD in Engineering	2014.10- Now
▪ Advisor: Prof. Steve Young	
NATIONAL TAIWAN UNIVERSITY	TAIPEI, TAIWAN
Master of Science in Electrical Engineering	2011.09-2013.07
▪ Advisor: Prof. Lin-shan Lee	
▪ Major GPA: 4.17/4.30, Overall GPA: 4.11 /4.30	
NATIONAL TAIWAN UNIVERSITY	TAIPEI, TAIWAN
Bachelor of Science in Electrical Engineering	2007.09-2011.07
▪ Major GPA: 3.82/4.30, Last 60 Credits GPA: 3.99/4.30, Overall GPA: 3.70/4.30	

AWARDS AND HONORS

Toshiba Research Studentship , Toshiba Research Europe Ltd	2015
Government Scholarship for Studying Overseas , MOE of Taiwan	2014
ISCA Best Student Paper Nominee , <i>InterSpeech 2013</i>	2013
▪ Earned 1 of 12 out of thousands of accepted papers.	
ISCA Best Student Paper Nominee , <i>InterSpeech 2012</i>	2012
▪ Earned 1 of 10 out of thousands of accepted papers.	
International Business Machine (IBM) Student Travel Grant , <i>IEEE SLT 2012</i>	2012
International Speech Communication Association (ISCA) Grant , <i>InterSpeech 2012</i>	2012

PUBLICATIONS

- [1] Tsung-Hsien Wen, M. Gasic, N. Mrksic, P.-h. Su, D. Vandyke, S. Young, “**Semantically Conditioned LSTM-based Natural Language Generation for Spoken Dialogue Systems**”, to be appear In Proc. EMNLP, Lisboa, Portugal, September 2015.
- [2] Tsung-Hsien Wen, M. Gasic, D. Kim, N. Mrksic, P.-h. Su, D. Vandyke, S. Young, “**Stochastic Language Generation in Dialogue using Recurrent Neural Networks with Convolutional Sentence Reranking**”, In Proc. SigDial, Prague, Czech Republic, September 2015.
- [3] Tsung-Hsien Wen, A. Heidel, H.-y. Lee, Y. Tsao, L.-s. Lee, “**Recurrent Neural Network-based Personalized Language Modeling by Social Network Crowdsourcing**”, In Proc. Interspeech, Lyon, France, August 2013. (Best Student Paper Nominee)
- [4] Tsung-Hsien Wen, H.-y. Lee, P.-h. Su, L.-s. Lee, “**Interactive Spoken Content Retrieval by Extended Query Model and Continuous State Space Markov Decision Process**”, In Proc. ICASSP, Vancouver, Canada, May 2013.
- [5] Tsung-Hsien Wen, H.-y. Lee, T.-Y. Chen, L.-s. Lee, “**Personalized Language Modeling by Crowd Sourcing with Social Network Data for Voice Access of Cloud Applications**”, In Proc. Spoken Language Technologies Workshop, Miami, Florida, December 2012.
- [6] Tsung-Hsien Wen, H.-y. Lee, L.-s. Lee, “**Interactive Spoken Content Retrieval with Different Types of Actions Optimized by a Markov Decision Process**”, Proc. Interspeech, Portland, Oregon, September 2012. (Best Student Paper Nominee)
- [7] Tsung-Hsien Wen, “**Voice Access of Cloud Applications: Language Model Personalization and Interactive Spoken Content Retrieval**”, Master Thesis, National Taiwan University.
- [8] Z. Wang, Tsung-Hsien Wen, P.-h. Su, Y. Stylianou, “**Learning Domain-Independent**

Dialogue Policies via Ontology Parameterisation”, In Proc. SigDial, Prague, Czech Republic, September 2015.

- [9] P.-h. Su, D. Vandyke, M. Gasic, N. Mrksic, Tsung-Hsien Wen, S. Young, “**Reward Shaping with Recurrent Neural Networks for Speeding up On-Line Policy Learning in Spoken Dialogue Systems**”, In Proc. SigDial, Prague, Czech Republic, September 2015.
- [10] P.-h. Su, D. Vandyke, M. Gasic, N. Mrksic, Tsung-Hsien Wen, S. Young, “**Learning from Real Users: Rating Dialogue Success with Neural Networks for Reinforcement Learning in Spoken Dialogue Systems**”, In Proc. Interspeech, Dresden, Germany, September 2015.
- [11] N. Mrksic, D. Séaghdha, B. Thomson, M. Gasic, P.-h. Su, D. Vandyke, Tsung-Hsien Wen, S. Young, “**Multi-domain Dialog State Tracking using Recurrent Neural Networks**”, In Proc. ACL, Beijing, China, July 2015.
- [12] P.-h. Su, Y.-B. Wang, Tsung-Hsien Wen, T.-h. Yu, L.-s. Lee, “**A Recursive Dialogue Game Framework with Optimal Policy Offering Personalized Computer-Assisted Language Learning**”, In Proc. Interspeech, Lyon, France, August 2013.
- [13] H.-y. Lee, Tsung-Hsien Wen, L.-s. Lee, “**Improved Semantic Retrieval of Spoken Content by Language Models Enhanced with Acoustic Similarity Graph**”, In Proc. Spoken Language Technologies Workshop, Miami, Florida, December 2012.

WORK EXPERIENCE

- Compulsory Second Lieutenant Chief Counselor, Republic of China Military** 2013.08-2014.07
- Oversee 100+ soldiers and managed political warfare affairs in a basic company.
- Teaching Assistant, National Taiwan University**
- Project: “Speech Special Project” (led undergrad running LVCSR from scratch). 2012.09-2013.07
 - Course: “Introduction to Digital Speech Processing” (120+ enrolled students). 2011.09-2012.02
- Algorithm Developer Intern, Story Sense Computing, start-up** 2012.10-2013.07
- Designed and developed backend NLP & ML algorithms using unstructured web data.
- Mobile Developer Intern, Story Sense Computing, start-up** 2011.07-2012.10
- Designed and launched company’s first product – WhatsTheNumber (700,000+ total downloads)

SELECTED PROJECTS

- GPU Programming (A+)**
- Implemented an image retrieval system using hand sketch queries; first place in final competition.
- Special Topic on Information Retrieval (A+)**
- Integrated analysis of sentiment, topic, and geo location distribution on Twitter micro blogs.
- Natural Language Processing (A+)**
- Sentiment classification competition on paired Mandarin discourses; ranked Top 8 of 30+ teams.
- Machine Learning (A)**
- Multi-label, missing feature classification problem in music genre; ranked Top 3 of 80+ teams.

TECHNICAL PROFICIENCY

- Programming:**
- C/C++, Python, Matlab, UNIX Shell Script, CUDA, Latex, Objective-C, Java, Android
- Language:**
- English (fluent), Mandarin Chinese (native), Taiwanese (native)

LEADERSHIP/ ACTIVITIES

- CTO of Team Pipers, Young Entrepreneur of the Future program (YEF), Epoch** 2010.02-2010.08
- 6-month entrepreneurship competition consisting of 12 teams and 120+ top students.
- Division Leader, NTU Orientation Camp (NTUOC), Information Division** 2010.03-2010.09
- Orientation camp for NTU freshmen, 6 day event with 4500+ participants total.
- Vice President, NTU Alumni Tainan** 2008.09-2009.07
- Held alumni activities and managed general affairs for 150+ members.