Curriculum Vitae of Yik-Cheung (Wilson) Tam

Language Technologies Institute
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Education

Ph.D. Language Technologies Institute, School of Computer Science, Carnegie Mellon University, 2009

Ph.D. thesis: Rapid Unsupervised Topic Adaptation - a Latent Semantic Approach
Advisor: Prof. Tanja Schultz
Thesis committee: Prof. Tanja Schultz, Prof. Alex Waibel, Prof. Stephan Vogel, Prof. Sanjeev P. Khudanpur (JHU)

M.S. Language Technologies Institute, School of Computer Science, Carnegie Mellon University, 2004

M.Phil. Computer Science, Hong Kong University of Science and Technology, 2001

M.Phil. thesis: Development of an Asynchronous Multi-band System for Continuous Speech Recognition
Advisor: Prof. Brian Kan-Wing Mak

B.Eng. Computer Engineering, Hong Kong University of Science and Technology, 1997

Work Experience

Research Assistant *International Center for Advanced Communication Technologies (InterACT), Carnegie Mellon University*, 2003 – present

The GALE (Global Autonomous Language Exploitation) program:

- Proposed a unified monolingual and crosslingual adaptation approach for speech translation.
- Built a Mandarin automatic speech recognition system for broadcast news and broadcast conversation.

The RT04 (Rich Transcription) program:

- Built statistical language models for Mandarin automatic speech recognition.

The Digital Olympics project:

- Built a Mandarin automatic speech recognition system for travel domain.

Intern *Speech Technology Group, Microsoft Research, Redmond, WA, USA*, Summer 2003

Mentors: Ciprian Chelba, Milind Mahajan and Alex Acero

- Language model adaptation using semantic supervision (US Patent 7478038).

Research Assistant *Project LISTEN, Carnegie Mellon University*, 2002 – 2003

- Developed a confidence measure to predict if a word was read correctly in a reading tutor that listens.

Research Assistant *Hong Kong University of Science and Technology*, 2001 – 2002

- Wrote a speech recognizer and implemented an algorithm for improved minimum classification error training for pronunciation learning for middle-school students.

Visiting Student *Department of Dialogue Systems Research, Bell Labs, Lucent Technologies, NJ, USA*, Summer 2001

- Implemented discriminative auditory-based features for robust speech recognition.

Software Engineer *ASM Assembly Automation Limited*, Hong Kong, 1998 – 1999

Programmer *Yips Hang Cheung (Holdings) Limited*, Hong Kong, 1997

Teaching Experience

- Teaching assistant for Speech Recognition and Understanding (Fall 2008).
- Teaching assistant for Applied Machine Learning (Fall 2006).

Professional Service

- Reviewer for the IEEE Transactions for Speech and Audio Processing.

Miscellaneous Information

- Native in Cantonese, Fluent in English and Mandarin.

Refereed Journal Papers

[1] **Y. C. Tam**, I. Lane and T. Schultz. Bilingual-LSA Based Adaptation for Statistical Machine Translation. In *Machine Translation*, volume 21, issue 4, page 187, Springer Netherlands, 2008, DOI: 10.1007/s10590-008-9045-2

[2] B. Mak, **Y. C. Tam** and Q. Li. Discriminative Auditory-based Features for Robust Speech Recognition. In *IEEE Transactions on Speech and Audio Processing*, volume 12, no 1, pages 27–36, January 2004.

Book Chapters

[1] **Y. C. Tam**, I. Lane and T. Schultz. Rapid Unsupervised Topic Adaptation – A Latent Semantic Approach. In *GALE Book*, 2009 (To appear)

[2] R. Hsiao, M. Fuhs, **Y. C. Tam**, Q. Jin, I. Lane and T. Schultz. The CMU-InterACT Mandarin Transcription System for GALE. In *GALE Book*, 2009 (To appear)

Conference Papers

[1] **Y. C. Tam** and T. Schultz. Incorporating Monolingual Corpora into Bilingual Latent Semantic Analysis for Crosslingual Language Model Adaptation. In *Proceedings of ICASSP*, Taipei, Taiwan, April 2009.

[2] H. Hsiao, **Y. C. Tam** and T. Schultz. Generalized Baum-Welch Algorithm for Discriminative Training on Large Vocabulary Continuous Speech Recognition System. In *Proceedings of ICASSP*, Taipei, Taiwan, April 2009.

[3] **Y. C. Tam** and T. Schultz. Correlated Bigram LSA for Unsupervised Language Model Adaptation. In *Neural Information Processing Systems (NIPS)*, Vancouver, Canada, December 2008.

[4] H. Hsiao, M. Fuhs, **Y. C. Tam**, Q. Jin and T. Schultz. The CMU-InterACT 2008 Mandarin Transcription System. In *Proceedings of Interspeech*, Brisbane, Australia, September 2008.

[5] **Y. C. Tam** and T. Schultz. Bilingual LSA-based Translation Lexicon Adaptation for Spoken Language Translation. In *Proceedings of Interspeech*, Antwerp, Belgium, August 2007.

[6] **Y. C. Tam**, I. Lane, and T. Schultz. Bilingual LSA-based Language Model Adaptation for Spoken Language Translation. In *Proceedings of ACL*, Prague, Czech Republic, June 2007.

[7] **Y. C. Tam** and T. Schultz, Correlated Latent Semantic Model for Unsupervised Language Model Adaptation. In *Proceedings of ICASSP*, Hawaii, USA, April 2007.

[8] **Y. C. Tam** and T. Schultz. Unsupervised Language Model Adaptation using Latent Semantic Marginals. In *Proceedings of Interspeech*, Pittsburgh, USA, September 2006.

[9] **Y. C. Tam** and T. Schultz. Language Model Adaptation using Variational Bayes Inference. In *Proceedings of Interspeech*, Lisbon, Portugal, September 2005.

[10] H. Yu, **Y. C. Tam**, T. Schaaf, S. Stüker, Q. Jin, M. Noamany, and T. Schultz. The ISL RT04 Mandarin Broadcast News Evaluation System. In *EARS Rich Transcription Workshop*, 2004.

[11] **Y. C. Tam**, J. Mostow, J. Beck and S. Banerjee. Training a Confidence Measure for a Reading Tutor that Listens. In *Proceedings of Eurospeech*, Geneva, Switzerland, September 2003.

[12] B. Mak, M. H. Siu, M. Ng, **Y. C. Tam**, Y. C. Chan, K. W. Chan, K. Y. Leung, S. Ho, F. H. Chong, J. Wong and J. Lo. PLASER: Pronunciation Learning via Automatic Speech Recognition. In *Proceedings of HLT-NAACL*, Edmonton, Canada, May 2003.

[13] B. Mak and **Y. C. Tam.** Discriminative Training of Auditory Filters of Different Shapes for Robust Speech Recognition. In *Proceedings of ICASSP*, Hong Kong, China, April 2003.

[14] B. Mak and **Y. C. Tam.** Performance of Discriminatively Trained Auditory Features on Aurora2 and Aurora3. In *Proceedings of ICSLP*, Denver, Colorado, USA, September 2002.

[15] B. Mak, **Y. C. Tam** and Q. Li. Discriminative Auditory Features for Robust Speech Recognition. In *Proceedings of ICASSP*, Orlando, Florida, May 2002.

[16] **Y. C. Tam** and B. Mak. An Alternative Approach of Finding Competing Hypotheses for Better Minimum Classification Error Training. In *Proceedings of ICASSP*, Orlando, Florida, May 2002.

[17] **Y. C. Tam** and B. Mak. Development of an Asynchronous Multi-band System for Continuous Speech Recognition. In *Proceedings of Eurospeech*, volume I, pages 575–578, Aalborg, Denmark, September 2001.

[18] B. Mak and **Y. C. Tam.** Asynchrony with Re-Trained Transition Probabilities Improves Performance in Multi-Band Speech Recognition. In *Proceedings of ICSLP*, volume IV, pages 149–152, Beijing, China, October 2000.

[19] **Y. C. Tam** and B. Mak. Optimization of Sub-Band Weights Using Simulated Noisy Speech in Multi-Band Speech Recognition. In *Proceedings of ICSLP*, volume I, pages 313–316, Beijing, China, October 2000.

Thesis

[1] Y. C. Tam. *Rapid Unsupervised Topic Adaptation - A Latent Semantic Approach*. PhD thesis, Language Technologies Institute, School of Computer Science, Carnegie Mellon University, July 2009.

[2] Y. C. Tam. *Development of an Asynchronous Multi-band System for Continuous Speech Recognition*. Master thesis, Department of Computer Science, Hong Kong University of Science and Technology, July 2001.