Junwei Liang

Language Technologies Institute

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EDUCATION

M.S. in Language Technologies   **2015-2017**
School of Computer Science, Carnegie Mellon University
Advisor: Alexander Hauptmann

B.S. in Computer Science   **2011-2015**
School of Information, Renmin University of China
Advisor: Qin Jin

HONORS & AWARDS

Yahoo! Fellowship (Stipend and tuition in CMU)   2016
IJCAI, NIST TRECVID student travel grants   2016
Best Undergraduate Thesis (Top 5%)   2015
Second Prize, the National Undergraduates Computer Design Competition of China   2014
National Prize (Top 10%), National Undergraduates Innovation Project   2013

RESEARCH & PROJECT EXPERIENCES

Informedia Lab, Carnegie Mellon University   **2015-present**

Research Assistant, Advisor: Alexander Hauptmann

- Large-scale Video Analysis and Retrieval

    - Large-scale automatic video content query

    - Runner-up in 2 conditions of NIST TRECVID 2016 MED task, and best performance in AVS task in "no annotation" condition

    - Unsupervised Learning of Video Concept Detectors from the Internet [IJCAI 2016, AAAI 2017 demo]

- Event Reconstruction from Unorganized Social Media Videos

    - Synchronization and localization of noisy user-generated videos to reconstruct the event scene and timeline [AAAI 2017 demo]

    - Further advanced video analysis including gunshot temporal localization [under review of ICASSP 2017], person tracking and 3D reconstruction

    - Processed and indexed over 60,000 videos from Syria Conflict for Human Rights Researchers

Multimedia Computing Lab, Renmin University of China   **2013-2015**

Research Assistant, Advisor: Qin Jin

- Semantic Content Analysis from User Generated Videos
  - Semantic concept annotation using audio
  - Fusion of visual and audio for semantic content analysis
  - Participated HUAWEI semantic concept annotation of UGC videos grand challenge 2014 and ranked 3rd in the evaluation
- Natural Language Description Generation for Images and Videos with Deep Models
  - Rank 1st in ImageCLEF 2015 "image to sentence" subtask in the evaluation

PUBLICATIONS

1. **Junwei Liang**, Lu Jiang, and Alexander Hauptmann. "Webly-Supervised Learning of Multimodal Video Detectors." In proceedings of the 2017 AAAI Conference. Demo Video: https://www.youtube.com/watch?v=3he6VDwYMCQ

2. **Junwei Liang**, Desai Fan, Han Lu, Poyao Huang, Jia Chen, Lu Jiang, and Alexander Hauptmann. "An Event Reconstruction Tool for Conflict Monitoring Using Social Media." In proceedings of the 2017 AAAI Conference. Demo Video: https://www.youtube.com/watch?v=qnmGhRv03lU

3. **Junwei Liang**, Lu Jiang, Deyu Meng, and Alexander Hauptmann. "Learning to detect concepts from webly-labeled video data." IJCAI, 2016.

4. **Junwei Liang,** Poyao Huang, Lu Jiang, Zhenzhong Lan, Jia Chen and Alexander Hauptmann. "In-formedia@TRECVID 2016 MED and AVS." In proceedings of NIST TRECVID Video Retrieval Evaluation Workshop 2016.

5. **Junwei Liang,** Lu Jiang and Alexander Hauptmann, "Temporal Localization of Audio Events for Conflict Monitoring in Social Media." In proceedings of the 42nd IEEE International Conference on Acoustics, Speech, and Signal Processing, ICASSP 2017.

6. **Junwei Liang,** Poyao Huang, Jia Chen and Alexander Hauptmann, "Synchronization for Multi-Perspective Videos in the Wild." In proceedings of the 42nd IEEE International Conference on Acoustics, Speech, and Signal Processing, ICASSP 2017.

7. **Junwei Liang**, Lu Jiang, Deyu Meng, and Alexander Hauptmann. "Exploiting Multi-modal Curriculum in Noisy Web Data for Large-scale Concept Learning." arXiv preprint arXiv:1607.04780.

8. **Junwei Liang**, Susanne Burger, Alex Hauptmann, and Jay D. Aronson. "Video Synchronization and Sound Search for Human Rights Documentation and Conflict Monitoring." CMU Center for Human Rights Technical Report, June 2016.

9. Jia Chen, **Junwei Liang**, Han Lu, Shoou-I Yu, Alexander Hauptmann. "Videos from the 2013 Boston Marathon: An Event Reconstruction Dataset for Synchronization and Localization." CMU Center for Human Rights Technical Report, October 2016.

10. Qin Jin, and **Junwei Liang**. "Video Description Generation using Audio and Visual Cues." In Proceedings of the 2016 ACM on International Conference on Multimedia Retrieval, pp. 239-242. ACM, 2016.

11. Qin Jin, **Junwei Liang**, and Xiaozhu Lin. "Generating Natural Video Descriptions via Multimodal Processing." Interspeech 2016.

12. **Junwei Liang**, Qin Jin, Xixi He, Gang Yang, Jieping Xu, Xirong Li, "Detecting Semantic Concepts in Consumer Videos Using Audio." In proceedings of the 40th IEEE International Conference on Acoustics, Speech, and Signal Processing, ICASSP 2015, Brisbane, Australia, April.

13. Qin Jin, **Junwei Liang**, Xixi He, Gang Yang, Jieping Xu, Xirong Li. "Semantic Concept Annotation For User Generated Videos Using Soundtracks." In proceeding of the ACM International Conference on Multimedia Retrieval (ICMR), 2015.

14. Xirong Li, Qin Jin, Shuai Liao, **Junwei Liang**, Xixi He, Yu-Jia Huo, Weiyu Lan, Bin Xiao, Yanxiong Lu, Jieping Xu, "RUC-Tencent at ImageCLEF 2015: Concept Detection, Localization and Sentence Generation", imageCLEF 2015.

15. **Junwei Liang**, Qin Jin, Xixi He, Gang Yang, Jieping Xu, and Xirong Li. "Semantic Concept Annotation of Consumer Videos at Frame-level Using Audio." In proceedings of the 15th Pacific Rim Conference on Multimedia, PCM 2014, Kuching, Malaysia, December 2014.

TEACHING EXPERIENCE

Teaching Assistant   **2014**

Practical Course on Speech Synthesis and Building Synthetic Voices by Prof. Alan Black, Summer School of Renmin University of China

SKILLS

Programming skills: Python, C/C++, Java, Shell, php, html, css, javascript, Erlang, Assembly Language

Apache server and database management skills

Last updated: Nov. 2016