

Po-Yao (Bernie) Huang

Mail: poyaoh@cs.cmu.edu; Phone: 1-412-326-5640; <http://www.cs.cmu.edu/~poyaoh>

2016 Siebel Scholar: <http://www.siebelscholars.com/scholars/1254>

School of Computer Science, Carnegie Mellon University

EDUCATION **Carnegie Mellon University**, Pittsburgh, PA, USA

- Ph.D. in Language and Information Technologies 2016.8 ~ present
- M.S. in Language Technologies 2014.8 ~ 2016.7
 - Rank: 1/40, Top 1%, GPA: 4.21 /4.33
 - Advisor: Alexander G. Hauptmann

National Taiwan University, Taipei, Taiwan

- M.S. in Computer Engineering 2003.9 ~ 2007.6
 - Rank 3/127, Top 2%, GPA: 4.00/4.00
- B.S. in Electrical Engineering 2003.9 ~ 2007.6
 - GPA: 3.87/4.00

WORK **Microsoft Inc**, Seattle, USA

- EXPERIENCE**
- Research Intern 2017.6 ~ 2017.8

MediaTek Inc, Taipei, Taiwan

- Senior Software Engineer 2010.9 ~ 2014.5

Army of Taiwan, Hsinchu, Taiwan

- Political Warfare Officer in Tank Battalion 542 2009.8 ~ 2010.8

PUBLICATIONS

(Selected)

- Po-Yao Huang, X. Chang, A. Hauptmann, “*Multi-Head Attention with Diversity for Learning Grounded Multilingual Multimodal Representations.*” (**EMNLP 2019**)
- Po-Yao Huang, G. Kang, W. Liu, X. Chang, A. Hauptmann, “*Annotation Efficient Cross-Modal Retrieval with Adversarial Attentive Alignment.*” (**ACM MM 2019**)
- Po-Yao Huang, Vaibhav, X. Chang, A. Hauptmann, “*Improving What Cross-Modal Retrieval Models Learn through Object-Oriented Inter- and Intra-Modal Attention Networks.*” (**ICMR 2019**)
- X. Chang, Po-Yao Huang, Y. Shen, X. Liang, Y. Yang, A. Hauptmann, “*RCA: Relational Context-Aware Agents for Person Search.*” (**ECCV 2018**)
- Po-Yao Huang, J. Liang, Vaibhav, X. Chang, A. Hauptmann, “*Learning discrete and continuous representations for cross-modal retrieval.*” (**TRECVID 2018**)
- Po-Yao Huang, J.W. Liang, J. Lamare, A. Hauptmann, “*Multimodal Filtering of Social Media for Temporal Monitoring and Event Analysis.*” (**ICMR 2018**)
- Po-Yao Huang, Y. Yuan, Z. Lan, L. Jiang, A. Hauptmann, “*Video Representation Learning and Latent Concept Mining for Large-scale Multi-label Video Classification.*” (**YouTube 8M Workshop, CVPR 2017**)
- J. Liang, D. Fan, H. Lu, Po-Yao Huang, J. Chen, L. Jiang, A. Hauptmann, “*An Event Reconstruction Tool for Conflict Monitoring Using Social Media.*” (**AAAI 2017**)
- J. Liang, Po-Yao Huang, A. Hauptmann, “*Synchronization for Multi-Perspective Videos in the Wild.*” (**ICASSP 2017**)
- J. Liang, J. Chen, Po-Yao Huang, X. Li, L. Jiang, Z. Lan, P. Pan, H. Fan, Q. Jin, J. Sun, Y. Chen, Y. Yang, A. Hauptmann, “*Informedia@ Trecvid 2016.*” (**TRECVID 2016**)

- Po-Yao Huang, F. Liu, S. Shiang, C. Dyer, “*Attention-based Multimodal Neural Machine Translation.*” First Conference in Machine Translation (**WMT 2016**)
- Z. Hu, Po-Yao Huang, Y. Deng, Y. Gao, E. Xing, “*Entity Hierarchy Embedding.*” (**ACL 2015**)
- Y. Liu, Po-Yao Huang, S. Cheng, “*Cognitive Vertical Handover in Heterogeneous Networks.*” (**QSHINE 2015**)
- H. Lin, Po-Yao Huang, S. Cheng, “*Cognitive Access in Multichannel Wireless Networks using Two-Dimension Markov Chain.*” (**IWCMC 2014**)
- Po-Yao Huang and K. Chen, “*A Cognitive CSMA-based Multichannel MAC for Cognitive Radio Network.*” (**APSIPA 2009**)

PATENTS

- A. Hauptmann, Po-Yao Huang, P. Sahin, “Multi-model Monitoring and Coaching System to Promote Proper Asthma Inhaler Technique” U.S. Patent, 62/708,345, Aug 2019
- A. Hauptmann, L. Jiang and Po-Yao Huang, “Large-Scale Video Content Retrieval System Through Text Query.” U.S. Patent, 15/769,233, Oct 2018
- Po-Yao Huang, K. Chen, “*Method of multichannel media access control*” Europe Patent, EP2369755, Sep 2011.

PROJECTS

Carnegie Mellon University

- Recognition of Activities in Extended Video (ActEV/DIVA): Developing video analysis system detecting activities in surveillance scenarios. Our system achieves state-of-the-art for surveillance video analysis in various challenges. (Website: <http://github.com/wenhel/argus>)
- Human right video analysis: Local and global audio synchronization for dramatic events analysis. (Website: <http://aladdin2.inf.cs.cmu.edu/human-rights>)
- Large scale content analysis of internet video for question answering and search
- Automatic monitoring of asthma inhaler usage and coaching for improving inhaler using techniques. (Demo: <https://goo.gl/X61Wwy>)

MediaTek Inc. (4th largest mobile IC designer. My works are used by > 1.1 billion people daily)

- Automatic Speech Recognition (ASR)
- Artificial Acoustic Bandwidth Expansion (ABWE) (Demo: <http://goo.gl/px5rt>)
- Multichannel Audio Recording and Enhancement (Demo: <http://goo.gl/1oUXvS>)

HONOR & AWARDS

Academic Awards

- 2nd Place in Kinetics-800 Action Recognition Challenge in ActivityNet 2019
- 1st Place in event-type classification in TREC-Incident Streams challenge 2019.
- 1st Place in NIST ActEV 2019 challenge
- 2nd Place in TRECVID 2018 Ad-hoc Video Search challenge
- 2nd Place in YouTube 8M 2017 challenge
- Siebel Scholar 2016 (Top CS/Business students in top graduate schools worldwide)
- Lemelson-MIT student prize competition, semi-final, 2015
- TRML National Math Competition, Silver Medal Award, 2003
- NTSM National Physics Competition, Silver Medal Award, 2003

SERVICES

Conference/Journal Reviewer

- ICMR, ACM MM, IEEE Access

- SCHOLARSHIP (Selected)**
- ACL, ICMR, AAAI, ACM MM, CVPR student travel awards/grants, 2015-2019 (\$1000-\$1500/each)
 - CMU Research Fellowship 2014-2019 (Tuition and stipend)
 - Siebel Scholarship, 2016 (\$35,000)
 - Din-Jing Memorial Scholarship, 2009 (\$1,000)
 - PTSGI Language Translation Scholarship, 2008 (\$1,000)
 - NTU Research Fellowship, 2007-2008 (Tuition and stipend)
 - NTU Cooperative Association Fellowship, 2007-2008 (\$1,000)
 - Distinguished student from Kaohsiung City (\$500)

EXPERTISE **Machine Learning for Natural Language Processing and Computer Vision**

- 5+ years in natural language and speech processing
- 5+ years in image and video recognition
- 5+ years in cross-modal retrieval

Programming Skills

- 10+ years C/C++, 8+ Python, 8+ MATLAB experience

Languages

- Mandarin, English (TOEFL:109/120)

- ACTIVITIES & LEADERSHIP**
- Student Representative and President of annual charity conference in NTU, 2006 (raised \$50,000)
 - President of NTU Fellowship, 2005 (led a Christian fellowship with 150 members)