Ting-Hao (Kenneth) Huang 黃挺豪

Tenure-Track Assistant Professor
College of Information Sciences and Technology
Pennsylvania State University
E357 Westgate Building, University Park, PA 16802

Email: txh710@psu.edu
windx0303@gmail.com
Homepage: http://KennethHuang.cc
Blog: http://windx.cc

Appointments

- **Pennsylvania State University**, University Park, PA, USA, 09/2018 – Present.
  Tenure-Track Assistant Professor.

- **Carnegie Mellon University**, Pittsburgh, PA, USA, 09/2013 – 08/2018.
  Research Assistant, Advisor: Dr. Jeffrey P. Bigham.

- **Institute of Information Science, Academia Sinica**, Taipei, Taiwan, 01/2016 – 02/2016.
  Visiting Scholar, Host: Dr. Lun-Wei Ku.

- **Microsoft Research**, Redmond, WA, USA, 05/2015 – 08/2015.
  Research Intern, Host: Dr. Margaret Mitchell.

- **Carnegie Mellon University**, Pittsburgh, PA, USA, 09/2011 – 08/2013.
  Research Assistant, Advisor: Dr. Teruko Mitamura.

- **National Taiwan University**, Taipei, Taiwan, 09/2006 – 06/2011.
  Research Assistant, Advisor: Dr. Hsin-Hsi Chen.

Awards and Honors

- Outstanding Paper Award (Top 2.5%), IUI 2019
- Honourable Mention Award (Top 5%), CHI 2018
- Best Paper Honorable Mention Award (Top 5%), CHI LBW 2016
- Yahoo! Fellowship of the InMind project at CMU, 2014 – Present
- Best Poster Award, LTI Student Research Symposium 2013

Education

- **Ph.D., Language and Information Technologies**
  School of Computer Science, Carnegie Mellon University, 2013 – 2018
  Advisor: Dr. Jeffrey P. Bigham.

- **M.S., Language and Information Technologies**
  School of Computer Science, Carnegie Mellon University, 2011 – 2013
  Advisor: Dr. Teruko Mitamura.

- **M.S., Computer Science**
  The Graduate Institute of Networking and Multimedia, National Taiwan University, 2007 – 2009
  Advisors: Dr. Hsin-Hsi Chen.

- **B.S., Computer Science & B.A., Chinese Literature (Double Major)**
  Dept. Computer Science and Information Engineering, National Taiwan University, 2003 – 2007
  Dept. Chinese Literature, National Taiwan University, 2003 – 2007

Peer-Reviewed Conference Papers

[C.15] Yen-Chia Hsu, Jennifer Cross, Paul Dille, Michael Tasota, Beatrice Dias, Randy Sargent, **Ting-Hao K. Huang**, Illah Nourbakhsh. (2019). Smell Pittsburgh: Community-Empowered Mobile Smell Reporting System In Proceedings of the 24th annual meeting of the Intelligent User Interfaces (**IUI 2019**), March 17-20 2019, Los Angeles, USA. (Acceptance Rate = 25%)
Outstanding Paper Award, Top 2.5% (7 out of 282 submissions)

[C.14] Sheng-Yeh Chen, Chao-Chun Hsu, Chuan-Chun Kuo, **Ting-Hao K. Huang**, Lun-Wei Ku. (2018). EmotionLines: An Emotion Corpus of Multi-Party Conversations. In Proceedings of the 11th edition of the Language Resources and Evaluation Conference (**LREC 2018**), 7-12 May 2018, Miyazaki, Japan.

[C.13] **Ting-Hao K. Huang**, Joseph Chee Chang, Jeffrey P. Bigham. (2018). Evorus: A Crowd-powered Conversational Assistant Built to Automate Itself Over Time. In Proceedings of Conference on Human Factors in Computing Systems 2018 (**CHI 2018**), 2018, Montréal, Canada. (Acceptance Rate = 25.8%)
Honourable Mention Award, Top 5% (101 out of 2500 submissions)

[C.12] **Ting-Hao K. Huang**, Jeffrey P. Bigham. (2017). A 10-Month-Long Deployment Study of On-Demand Recruiting for Low-Latency Crowdsourcing. In Proceedings of The fifth AAAI Conference on Human Computation and Crowdsourcing (**HCOMP 2017**), 2017, Quebec City, Canada. (Acceptance Rate = 28.9%)

[C.11] Saiganesh Swaminathan, Raymond Fok, Fanglin Chen, **Ting-Hao K. Huang**, Irene Lin, Rohan Jadvani, Walter S. Lasecki, Jeffrey P. Bigham. (2017). WearMail: On-the-Go Access to Information in Your Email with a Privacy-Preserving Human Computation Workflow. In Proceedings of 30th ACM Symposium on User Interface Software and Technology (**UIST 2017**), 2017, Quebec City, Canada. (Acceptance Rate = 22.5%)

[C.10] **Ting-Hao K. Huang**, Yun-Nung Chen, Jeffrey P. Bigham. (2017). Real-time On-Demand Crowd-powered Entity Extraction. In Proceedings of the 5th Edition Of The Collective Intelligence Conference (**CI 2017**, oral presentation), 2017, New York University, NY, USA.

[C.9] **Ting-Hao K. Huang**, Walter S. Lasecki, Amos Azaria, Jeffrey P. Bigham. (2016). "Is there anything else I can help you with?": Challenges in Deploying an On-Demand Crowd-Powered Conversational Agent. Conference on Human Computation & Crowdsourcing (**HCOMP 2016**), November, 2016, Austin, TX, USA. (Acceptance Rate = 30.3%).

[C.8] **Ting-Hao K. Huang**, Francis Ferraro, Nasrin Mostafazadeh, Ishan Misra, Jacob Devlin, Aishwarya Agrawal, Ross Girshick, Xiaodong He, Pushmeet Kohli, Dhruv Batra, Larry Zitnick, Devi Parikh, Lucy Vanderwende, Michel Galley, Margaret Mitchell. (2016). Visual Storytelling. In proc. the 15th Annual Conference of the North American Chapter of the Association for Computational Linguistics (**NAACL 2016**), June, 2016, San Diego, CA, USA. (Acceptance Rate = 29%).

[C.7] **Ting-Hao K. Huang**, Walter S. Lasecki, Jeffrey P. Bigham. (2015). Guardian: A Crowd-Powered Spoken Dialog System for Web APIs. Conference on Human Computation & Crowdsourcing (**HCOMP 2015**), November, 2015, San Diego, USA. (Acceptance Rate = 30%).

[C.6] Francis Ferraro, Nasrin Mostafazadeh, **Ting-Hao K. Huang**, Lucy Vanderwende, Jacob Devlin, Michel Galley, Margaret Mitchell. (2015). A Survey of Current Datasets for Vision and Language Research. Conference on Empirical Methods in Natural Language Processing (**EMNLP 2015**), September, 2015, Lisbon, Portugal. (Acceptance Rate = 24%, 312/1315).

[C.5] Ho-Cheng Yu, **Ting-Hao K. Huang**, Hsin-Hsi Chen. (2012). Domain Dependent Word Polarity Analysis for Sentiment Classification. Proceedings of the 24th ROCLING (**ROCLING 2012**) conference.

[C.4] Lun-Wei Ku, **Ting-Hao K. Huang**, Hsin-Hsi Chen. (2011). Predicting Opinion Dependency

Relations for Opinion Analysis. Proceeding of IJCNLP (**IJCNLP 2011**). (Acceptance Rate = 36%)

[C.3] **Ting-Hao K. Huang**, Lun-Wei Ku, Hsin-Hsi Chen. (2010). Predicting Morphological Types of Chinese Bi-Character Words by Machine Learning Approaches. Proceedings of LREC (**LREC 2010**), Malta, pp. 844–850.

[C.2] Lun-Wei Ku, **Ting-Hao K. Huang**, and Hsin-Hsi Chen. (2010). Construction of a Chinese Opinion Treebank. Proceeding of LREC (**LREC 2010**), Malta, pp. 1315–1319.

[C.1] Lun-Wei Ku, **Ting-Hao K. Huang**, and Hsin-Hsi Chen. (2009). Using Morphological and Syntactic Structures for Chinese Opinion Analysis. Proceedings of EMNLP (**EMNLP 2009**), Singapore, pp. 1260–1269. (Acceptance Rate = 34%)

Peer-Reviewed Journal Articles

[J.3] **Ting-Hao K. Huang**, Amos Azaria, Oscar Romero, Jeffrey P. Bigham. InstructableCrowd: Creating IF-THEN Rules for Smartphones via Conversations with the Crowd. Human Computation. **Under Review**

[J.2] **Ting-Hao K. Huang**: Social Metaphor Detection via Topical Analysis. International Journal of Computational Linguistics and Chinese Language Processing (**IJCLCLP**), 19(2) (2014). (Published)

[J.1] Ho-Cheng Yu, **Ting-Hao K. Huang**, and Hsin-Hsi Chen. (2012). Domain Dependent Word Polarity Analysis for Sentiment Classification. International Journal of Computational Linguistics and Chinese Language Processing (**IJCLCLP**), 17(3-4): Special Issue on ROCLING 2012. (Published)

Workshop, Symposia, and Consortia Papers

[W.5] Saiganesh Swaminathan, **Ting-Hao K. Huang**, Irene Lin, Anhong Guo, Gierad Laput, and Jeffrey P. Bigham. (2017). Epistemo: A Crowd-Powered Conversational Search Interface. In the Talking with Conversational Agents in Collaborative Action Workshop at the 20th ACM conference on Computer-Supported Cooperative Work and Social Computing.

[W.4] Chieh-Yang Huang, **Ting-Hao K. Huang**, Lun-Wei Ku. (2017). Challenges in Providing Automatic Affective Feedback in Instant Messaging Applications. In the Designing the User Experience of Machine Learning Systems symposium **(AAAI 2017 Spring Symposium Series)**, March 27-29, 2017, Palo Alto, USA.

[W.3] **Ting-Hao K. Huang**. Crowd-Powered Conversational Agents. Doctoral Consortium of Conference on Human Computation & Crowdsourcing **(HCOMP DC 2016)**, 2016, Austin, TX, USA.

[W.2] **Ting-Hao K. Huang**, Yun-Nung Chen, Lingpeng Kong. (2015). ACBiMA: Advanced Chinese Bi-Character Word Morphological Analyzer. The 8th SIGHAN Workshop on Chinese Language Processing (**SIGHAN 2015**), July 30-31, 2015, Beijing, China. (Acceptance Rate = 29%). Best Poster Award of LTI Student Research Symposium 2013

[W.1] **Ting-Hao K. Huang**. (2013). Social Metaphor Detection via Topical Analysis. IJCNLP 2013 Workshop on Natural Language Processing for Social Media (**SocialNLP 2013**), pages 14–22, Nagoya, Japan, 14 October 2013. (Acceptance Rate = 35%).

Demos

[D.4] Chao-Chun Hsu, Yu-Hua Chen, Zi-Yuan Chen, Hsin-Yu Lin, **Ting-Hao K. Huang**, and Lun-Wei Ku. Dixit: Interactive Visual Storytelling via Term Manipulation. In the Demo track of The Web Conference 2019 (**TheWebConf Demo 2019**).

[D.3] Chieh-Yang Huang, Tristan Labetoulle, **Ting-Hao K. Huang**, Yi-Pei Chen, Hung-Chen Chen, Vallari Srivastava, and Lun-Wei Ku. MoodSwipe: A Soft Keyboard that Suggests Messages Based on User-Specified Emotions. In the Demo track of the Conference on Empirical Methods in Natural Language Processing 2017 (**EMNLP Demo 2017**), Sep, 2017, Copenhagen, Denmark.

[D.2] Shih-Ming Wang, Chun-Hui Li, Yu-Chun Lo, **Ting-Hao K. Huang**, Lun-Wei Ku. (2016). Sensing Emotions in Text Messages: An Application and Deployment Study of EmotionPush. In the demo track of the 26th International Conference on Computational Linguistics (**COLING Demo 2016**), Dec, 2016, Osaka, Japan.

[D.1] **Ting-Hao K. Huang**, Ho-Cheng Yu and Hsin-Hsi Chen. (2012). Modeling Pollyanna Phenomena in Chinese Sentiment Analysis. In the demo track of the COLING 2012 (**COLING Demo 2012**).

Posters and Extended Abstracts

[A.5] Ting-Yao Hsu, Yen-Chia Hsu, **Ting-Hao K. Huang**. On How Users Edit Computer-Generated Visual Stories. In CHI'19 Late-Breaking Work on Human Factors in Computing Systems (**CHI LBW 2019**), 2019.

[A.4] Jeffrey P. Bigham, Raja Kushalnagar, **Ting-Hao K. Huang**, Juan Pablo Flores and Saiph Savage. On How Deaf People Might Use Speech to Control Devices. In the Poster track ASSETS 2017 (**ASSETS Poster 2017**), October, 2017. Baltimore, Maryland.

[A.3] **Ting-Hao K. Huang**, Joseph Chee Chang, Saiganesh Swaminathan, Jeffrey P. Bigham. Evorus: A Crowd-powered Conversational Assistant That Automates Itself Over Time. In the Poster track of the 20th ACM Symposium on User Interface Software and Technology (**UIST Poster 2017**), October, 2017. Quebec City, Canada.

[A.2] **Ting-Hao K. Huang**, Amos Azaria, Jeffrey P. Bigham. (2016). InstructableCrowd: Creating IF-THEN Rules via Conversations with the Crowd. In CHI '16 Late-Breaking Work on Human Factors in Computing Systems (**CHI LBW 2016**), May, 2016, San Jose, CA, USA. Best Paper Honorable Mention Award, Top 5% (14 out of 281)

[A.1] **Ting-Hao K. Huang**, Walter S. Lasecki, Alan L. Ritter, Jeffrey P. Bigham. (2014). Combining Non-Expert and Expert Crowd Work to Convert Web APIs to Dialog Systems. Work-in-Progress paper in the Proceeding of Conference on Human Computation and Crowdsourcing (**HCOMP WIP 2014**), November 2-4, 2014, Pittsburgh, USA.

Theses

[T.2] **Ting-Hao K. Huang**. (2018). A Crowd-Powered Conversational Assistant That Automates Itself Over Time. PhD Dissertation, Language Technologies Institute, Carnegie Mellon University, Pittsburgh, PA, USA. 2018.

[T.1] **Ting-Hao K. Huang**. (2009). Automatic Extraction of Intra- and Inter- word Syntactic Structures for Chinese Opinion Analysis (應用於中文意見分析之詞內暨詞間語法結構自動擷取研究). Master thesis, Graduate Institute of Networking and Multimedia (GINM), National Taiwan University, Taipei.

Grants and Other Support

[G.2] **Visual Storytelling: Generation, Post-Editing, and Applications**
PSU IST Seed Fund
Principal Investigator, Spring 2019. (1 fully-funded PhD student for 1 year)

[G.1] Regional Differences in Opinions Toward Climate Change Among Twitter Users
PSU Twitter Data for Social Science Research Seed Grants (Level-2)
Principal Investigator, March 2019. ($20,000)
Co-PI: Dr. John Yen (College of Information Sciences and Technology) and Dr. Guangqing Chi (College of Agricultural Sciences.)

Professional Activity

- Organizer, **Workshop on Storytelling** 2018 (co-located with NAACL-HLT), 2019.
- Organizer, **Visual Storytelling Challenge** at ICCV17's 2nd workshop on Closing the Loop Between Vision and Language, Venice, Italy.
- Conference Paper Reviewer / PC Member: CHI 2017/2018/2019, CSCW 2018, IMWUT (2017 Feb Round), UIST 2018, WWW 2019
- Workshop Reviewer / PC Member: CHI LBW 2018, SocialNLP 2016, user2agent 2019

Selected Invited Talks

- *Crowdsourcing and Crowd-AI Systems*, at the **National Center for High-Performance Computing**, Taiwan, Dec 19, 2019.
- *Crowd Research: Data, Workflows, and Crowd-AI Systems*, at the **"Information Retrieval meets Artificial Intelligence" Workshop**, Taipei, Taiwan, Dec 12, 2018.
- *Crowd Research: Labels, Workflows, and Crowd-Powered Systems*, at the IEEE/IBM Watson Talk Series of **West Virginia University**, Nov 13, 2017.
- *Crowd Research: Labels, Workflows, and Crowd-Powered Systems*, at the Department of Computer Science and Information Engineering (CSIE), **National Taiwan University**, Sep 29, 2017.
- *Crowd Research: Labels, Workflows, and Crowd-Powered Systems*, at the Institute of Information Science (IIS), **Academia Sinica, Taiwan**, Sep 26, 2017.
- *Real-time Crowd-powered Slot Filling in Dialogue Systems*, at the Sphinx Lunch Talk Series of **Carnegie Mellon University**, Apr 2, 2015.
- *Crowd-powered Dialogue Systems*, at the Institute of Information Science (IIS), **Academia Sinica, Taiwan**, Aug 20, 2015.

Softwares

- **Ting-Hao K. Huang**. **UIMA Regex**. Computer software. UIMA Regex. Vers. 4.0. Carnegie Mellon University, 23 Apr. 2013. Web. 03 Feb. 2015. <https://sites.google.com/site/uimaregex/>.
- **Ting-Hao K. Huang**. **Alt Text Editor**. Computer software. Alt Text Editor. Vers. 1. N.p., 25 Feb. 2015. Web. Class project of the "Web Accessibility" class (05-897 A3) at Carnegie Mellon University. Instructor: Prof. Jennifer Mankoff and Prof. Jeffrey Bigham.
Project Website: https://talkingtothecrowd.org/Chorus/AltText/.

Tutorials

- **Ting-Hao K. Huang**. September, 2016. How to make a valid and good worker interface page for Amazon Mechanical Turk external HITs (In Chinese. 如何製作一個 Amazon Mechanical Turk 需要的外部網頁). https://tinyurl.com/y7wxgpbk

Media Coverage

- WTAE TV News. Janelle Hall. (2018, Feb 8).
  Meet the "Chorus" chatbot: Unlike Alexa or Siri, it's powered by actual people on the other end.
  `http://www.wtae.com/article/chorus-chatbot-carnegie-mellon-university`
  `-pittsburgh/16870459`

- TribLive. Aaron Aupperlee. (2018, Feb 8).
  Chatbot developed at Carnegie Mellon uses humans to answer questions AIs can't.
  `http://triblive.com/business/technology/13275597-74/chatbot-developed-at-carnegie-`
  `mellon-uses-humans-to-answer-questions-ais-cant`

- pressetext. (2018, Feb 8).
  KI-System "Evorus" wird zunehmend eigenständig: Von Menschen lernendes System beant-wortet immer komplexere Fragen.
  `https://www.pressetext.com/#news/20180208014`

- CMU SCS News. Byron Spice. (2018, Feb 7).
  Crowd Workers, AI Make Conversational Agents Smarter.
  `https://www.cs.cmu.edu/news/crowd-workers-ai-make-conversational-agents-smarter`

- EurekAlert!. (2018, Feb 7).
  Crowd workers, AI make conversational agents smarter: Human/machine hybrid system can answer wide array of questions.
  `https://www.eurekalert.org/pub_releases/2018-02/cmu-cwa020618.php`

- The Register. Thomas Claburn. (2017, Aug 14).
  Dismayed by woeful AI chatbots, boffins hired real people – and went back to square one.
  `https://www.theregister.co.uk/2017/08/14/chat_bots_work_better_with_people/`

- The Stack. Martin Anderson. (2016, April 14).
  Microsoft releases data-set for 'emotional' automated captioning.
  `https://thestack.com/cloud/2016/04/14/microsoft-sind-dataset-captioning-narrative/`

- Microsoft Official Blog. Linn, Allison. (2016, April 14).
  Teaching computers to describe images as people would.
  `http://blogs.microsoft.com/next/2016/04/14/teaching-computers-to-`
  `describe-images-as-people-would/`

- VentureBeat. Novet, Jordan. (2016, April 14).
  Microsoft researchers are teaching AI to write stories about groups of photos.
  `http://venturebeat.com/2016/04/14/microsoft-ai-visual-storytelling/`

- WIRED AWAKE (2016, April 15).
  WIRED Awake: 10 must-read articles for 15 April. WIRED.CO.UK.
  `http://www.wired.co.uk/news/archive/2016-04/15/wired-awake-15-april`

- MIT Technology Review (2016, April 27).
  Will Artificial Intelligence Win the Caption Contest?.
  `https://www.technologyreview.com/s/601339/`
  `will-artificial-intelligence-win-the-caption-contest/#/set/id/601340/`

Honors as a Writer

- Invited member of "Mystery Writers of Taiwan", 2010 – Present
- Mystery Fiction Award, by "Mystery Writers of Taiwan", 2010
  Short Story: "The Maiden's Prayer"
- First Prize of "Taipei The Less" Essay Competition, 2005
  Flash Fiction: "Genesis in Taipei."

References

- **Jeffrey P. Bigham**
  Associate Professor, Human-Computer Interaction Institute, Carnegie Mellon University, USA.
  `jbigham@cs.cmu.edu`

- **Chris Callison-Burch**
  Associate Professor, Computer and Information Science Department, University of Pennsylvania, USA.
  `ccb@upenn.edu`

- **Alexander I. Rudnicky**
  Research Professor, Computer Science Department, Carnegie Mellon University, USA.
  `air@cs.cmu.edu`

- **Margaret Mitchell**
  Senior Research Scientist, Google Research, USA.
  `margarmitchell@gmail.com`

- **Walter S. Lasecki**
  Assistant Professor, Computer Science & Engineering, University of Michigan, USA.
  `wlasecki@umich.edu`

- **Lun-Wei Ku**
  Associate Research Fellow, Institute of Information Science, Academia Sinica, Taiwan.
  `lwku@iis.sinica.edu.tw`

- **Hsin-Hsi Chen**
  Professor, Department of Computer Science and Information Engineering, National Taiwan University, Taiwan.
  `hhchen@ntu.edu.tw`

Last updated: March 21, 2019