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RESEARCH INTERESTS

Natural language processing, large language models, natural language generation, deep learning, social media analytics, information extraction, reinforcement learning, artificial intelligence

EDUCATIONAL BACKGROUND

Postdoctoral Fellow 2013–2015
Carnegie Mellon University, Pittsburgh, Pennsylvania
Advisors: Noah A. Smith and Norman Sadeh

Ph.D. in Computer Science 2007–2011
University of Texas at Dallas, Richardson, Texas
Advisor: Yang Liu. Committee members: Carlos Busso, Vincent Ng and Sanda Harabagiu

B.S./M.S. in Computer Science 2000–2007
Fudan University, Shanghai
Advisors: Xuanjing Huang and Lide Wu

EMPLOYMENT HISTORY

Associate Professor of Computer Science September 2022–Present
Emory University, Atlanta, Georgia
Leading a research group to advance natural language understanding and generation by developing innovative architectures, training methodologies, and robust evaluation metrics for large language models.

Associate Professor August 2021–August 2022
University of Central Florida, Orlando, Florida
Conducted extensive research on automatic summarization technology, targeting the generation of concise textual summaries from a massive amount of data to combat information overload [26][33][34][35].

Assistant Professor August 2015–July 2021
University of Central Florida, Orlando, Florida
Leveraging deep neural network advancements, our research investigates extractive and abstractive methods to produce informative, concise, and accurate summaries [36][49].

Senior Research Scientist January 2013–November 2013
BOSCH Research and Technology Center, Palo Alto, California
Designed and implemented deep natural language understanding modules for in-car applications, concentrating on natural language interaction, spoken language understanding, summarization [50][57], social media analytics [58], and the development of cutting-edge machine learning systems in these domains.

Research Scientist May 2011–December 2012
BOSCH Research and Technology Center, Palo Alto, California

Developed one of the first text normalization systems to translate non-standard English words (e.g., *tmrw*) on social media to their standard forms [59]. Built state-of-the-art text normalization and event summarization systems for reading out tweets and trending news to car drivers via text-to-speech (TTS) technology [56][61].

HONORS AND AWARDS

NSF Faculty Early Career Development (CAREER) Award, 2022

Amazon AWS Machine Learning Research Award, 2020

Area Chair Favorite Paper at the 27th Intl. Conference on Computational Linguistics (COLING), 2018

Best Paper Finalist at the 25th International World Wide Web Conference (WWW), 2016

Invited to participate in **MIT Rising Stars in EECS** (An Academic Career Workshop for nearly 60 top EECS women scholars in academia), 2015

Special Performance Recognition Award, Director of Research, BOSCH Research, 2012

On-Ramps into Academia workshop Travel Grant, National Science Foundation (NSF), 2012

Erik Jonsson Distinguished Research Fellowship, University of Texas at Dallas, 2007–2011

Academic Excellence Award, University of Texas at Dallas, 2011

CRA-W Career Mentoring Workshop Travel Grant, National Science Foundation (NSF), 2011

The Aage and Margareta Moller Endowed Scholarship, University of Texas at Dallas, 2010

ACL-IJCNLP Student Travel Grant, COLIPS Fund, 2009

SIGDIAL Conference Travel Grant, International Speech Communication Association (ISCA), 2008

PUBLICATIONS

Citation Statistics: h-index 33, i10-index 54, citations $\geq 3,800$, according to [Google Scholar](#) (04/2023).

Journal Article Publications

- [1] Shomir Wilson, Florian Schaub, Frederick Liu, Kanthashree Mysore Sathyendra, Daniel Smullen, Sebastian Zimmeck, Rohan Ramanath, Peter Story, Fei Liu, Norman Sadeh and Noah A. Smith. “[Analyzing Privacy Policies at Scale: From Crowdsourcing to Automated Annotations.](#)” *ACM Transactions on the Web (TWEB)*, Vol. 13 No. 1, pp. 1–29, February 2019.
- [2] Wencan Luo, Fei Liu, Zitao Liu and Diane Litman. “[A Novel ILP Framework for Summarizing Content with High Lexical Variety.](#)” *Natural Language Engineering*, Cambridge University Press, Vol. 24, No. 6, pp. 887–920, November 2018.
- [3] Patrícia Alves-Oliveira, Richard G Freedman, Dan Grollman, Laura Herlant, Laura Humphrey, Fei Liu, Ross Mead, Frank Stein, Tom Williams, and Shomir Wilson. “[Reports on the 2016 AAI Fall Symposium Series.](#)” *AI Magazine*, Vol. 38, No. 2, pp. 86–90, July 2017.
- [4] Joel R. Reidenberg, Travis Breaux, Lorrie Faith Cranor, Brian French, Amanda Grannis, James T. Graves, Fei Liu, Aleecia M. McDonald, Thomas B. Norton, Rohan Ramanath, N. Cameron Russell, Norman Sadeh, and Florian Schaub. “[Disagreeable Privacy Policies: Mismatches between Meaning and Users’ Understanding.](#)” *Berkeley Law Technology Journal*, Vol. 30, pp. 39–68, 2015.
- [5] Fei Liu and Yang Liu. “[Towards Abstractive Speech Summarization: Exploring Unsupervised and Supervised Approaches for Spoken Utterance Compression.](#)” *IEEE Transactions on Audio, Speech and Language Processing*, Vol. 21, No. 7, pp. 1469–1480, July 2013.
- [6] Fei Liu, Feifan Liu and Yang Liu. “[A Supervised Framework for Keyword Extraction from Meeting Transcripts.](#)” *IEEE Transactions on Audio, Speech and Language Processing*, Vol. 19, No. 3, pp.

Peer-Reviewed Conference and Workshop Publications

[Students under my direct supervision are denoted by ^S.]

- [7] Yebowen Hu, Tim Ganter, Hanieh Deilamsalehy, Franck Dernoncourt, Hassan Foroosh and Fei Liu. “[MeetingBank: A Benchmark Dataset for Meeting Summarization](#).” In *Proceedings of the 61st Annual Meeting of the Association for Computational Linguistics (ACL)*, 2023. Acceptance rate: N/A
- [8] Pengshan Cai, Kaiqiang Song, Sangwoo Cho, Hongwei Wang, Xiaoyang Wang, Hong Yu, Fei Liu and Dong Yu. “[Generating User-Engaging News Headlines](#).” In *Proceedings of the 61st Annual Meeting of the Association for Computational Linguistics (ACL)*, 2023. Acceptance rate: N/A
- [9] Sangwoo Cho, Kaiqiang Song, Xiaoyang Wang, Fei Liu, Dong Yu. “[Toward Unifying Text Segmentation and Long Document Summarization](#).” In *Proceedings of the 2022 Conference on Empirical Methods in Natural Language Processing (EMNLP)*, pp. 106–118, 2022. Acceptance rate: 829/4190 = 19.8%
- [10] Pengshan Cai, Fei Liu, Adarsha Bajracharya, Weisong Liu, Dan Berlowitz, Joe Sills, Alok Kapoor, Richeek Pradhan, David Levy and Hong Yu. “[Generation of Patient After-Visit Summaries to Support Physicians](#).” In *Proceedings of the 29th International Conference on Computational Linguistics (COLING)*, 2022. Acceptance rate: 634/2026 = 31.3%
- [11] Pengshan Cai, Mo Yu, Fei Liu and Hong Yu. “[Generating Coherent Narratives with Subtopic Planning to Answer How-to Questions](#).” In *Proceedings of the 2nd Workshop on Natural Language Generation, Evaluation, and Metrics (GEM) at EMNLP*, pp.26–42, 2022.
- [12] Kaiqiang Song,^S Chen Li, Xiaoyang Wang, Dong Yu and Fei Liu. “[Towards Abstractive Grounded Summarization of Podcast Transcripts](#).” In *Proceedings of the 60th Annual Meeting of the Association for Computational Linguistics (ACL)*, 2022. Acceptance rate: 701/3378 = 20.8%
- [13] Pengshan Cai, Hui Wan, Fei Liu, Mo Yu, Hong Yu and Sachindra Joshi. “[Learning as Conversation: Dialogue Systems Reinforced for Information Acquisition](#).” In *Proceedings of the 2022 Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies (NAACL)*, 2022. Acceptance rate: 442/2103 = 21%.
- [14] Sangwoo Cho,^S Franck Dernoncourt, Tim Ganter, Trung Bui, Nedim Lipka, Walter Chang, Hailin Jin, Jonathan Brandt, Hassan Foroosh and Fei Liu. “[StreamHover: Livestream Transcript Summarization and Annotation](#).” In *Proceedings of the 2021 Conference on Empirical Methods in Natural Language Processing (EMNLP)*, pp. 6457–6474, 2021. Acceptance rate: 840/3600 = 23.3%.
- [15] Shen Yan, Kaiqiang Song, Fei Liu and Mi Zhang. “[CATE: Computation-aware Neural Architecture Encoding with Transformers](#).” In *Proceedings of the Thirty-eighth International Conference on Machine Learning (ICML)*, 2021. [Oral Presentation] Acceptance rate: 1184/5513 = 21.5%.
- [16] Kaiqiang Song,^S Bingqing Wang, Zhe Feng and Fei Liu. “[A New Approach to Overgenerating and Scoring Abstractive Summaries](#).” In *Proceedings of the 2021 Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies (NAACL)*, pp. 1392–1404, 2021. [Oral Presentation] Acceptance rate: 477/1797 = 26.5%.
- [17] Jia Jin Koay,^S Alexander Roustai,^S Xiaojin Dai^S and Fei Liu. “[A Sliding-Window Approach to Automatic Creation of Meeting Minutes](#).” In *Proceedings of the 2021 Conf. of the North American Chapter of the Association for Computational Linguistics (NAACL)*, Student Research Workshop, pp. 68–75, 2021.
- [18] Logan Lebanoff,^S Bingqing Wang, Zhe Feng and Fei Liu. “[Modeling Endorsement for Multi-Document Abstractive Summarization](#).” In *Proceedings of the Third Workshop on New Frontiers in Summarization*

at **EMNLP**, pp. 119–130, 2021. [Oral Presentation]

- [19] Logan Lebanoff,^S Charles Newton, Victor Hung, Beth Atkinson, John Killilea and Fei Liu. “**Semantic Parsing of Brief and Multi-Intent Natural Language Utterances.**” In *Proceedings of the Second Workshop on Domain Adaptation for NLP at EACL*, pp. 255–262, 2021. [Oral Presentation]
- [20] Logan Lebanoff,^S Franck Dernoncourt, Doo Soon Kim, Lidan Wang, Walter Chang, Fei Liu. “**Learning to Fuse Sentences with Transformers for Summarization.**” In *Proceedings of the 2020 Conference on Empirical Methods in Natural Language Processing (EMNLP)*, pp. 4136–4142, 2020. Acceptance rate: $752/3359 = 22.4\%$.
- [21] Sangwoo Cho,^S Kaiqiang Song,^S Chen Li, Dong Yu, Hassan Foroosh and Fei Liu. “**Better Highlighting: Creating Sub-Sentence Summary Highlights.**” In *Proceedings of the 2020 Conference on Empirical Methods in Natural Language Processing (EMNLP)*, pp. 6282–6300, 2020. Acceptance rate: $752/3359 = 22.4\%$.
- [22] Kaiqiang Song,^S Chen Li, Xiaoyang Wang, Dong Yu and Fei Liu. “**Automatic Summarization of Open-Domain Podcast Episodes.**” In *Proceedings of the 29th Text REtrieval Conference (TREC)*, 2020. **Won second place in the TREC 2020 Podcast Challenge.**
- [23] Jia Jin Koay,^S Alexander Roustai,^S Xiaojin Dai,^S Dillon Burns,^S Alec Kerrigan,^S and Fei Liu. “**How Domain Terminology Affects Meeting Summarization Performance.**” In *Proceedings of the 28th Intl. Conf. on Computational Linguistics (COLING)*, pp. 5689–5695, 2020. Acceptance rate: $644/1956 = 32.9\%$.
- [24] Logan Lebanoff,^S Franck Dernoncourt, Doo Soon Kim, Walter Chang and Fei Liu. “**A Cascade Approach to Neural Abstractive Summarization with Content Selection and Fusion.**” In *Proceedings of the Conference of the Asia-Pacific Chapter of the Association for Computational Linguistics (AAACL)*, pp. 529–535, 2020. [Oral Presentation] Acceptance rate: $106/375 = 28.3\%$.
- [25] Logan Lebanoff,^S John Muchovej,^S Franck Dernoncourt, Doo Soon Kim, Lidan Wang, Walter Chang and Fei Liu. “**Understanding Points of Correspondence between Sentences for Abstractive Summarization.**” In *Proceedings of the 58th Annual Meeting of the Association for Computational Linguistics (ACL)*, Student Research Workshop, Seattle, WA, pp. 191–198, 2020.
- [26] Kaiqiang Song,^S Bingqing Wang, Zhe Feng, Liu Ren and Fei Liu. “**Controlling the Amount of Verbatim Copying in Abstractive Summarization.**” In *Proceedings of the Thirty-Fourth AAAI Conference on Artificial Intelligence (AAAI)*, New York City, NY, Vol. 34, No. 05, pp. 8902–8909, 2020. [Spotlight Presentation] Acceptance rate: $1591/7737 = 20.6\%$.
- [27] Kaiqiang Song,^S Logan Lebanoff,^S Qipeng Guo, Xipeng Qiu, Xiangyang Xue, Chen Li, Dong Yu and Fei Liu. “**Joint Parsing and Generation for Abstractive Summarization.**” In *Proceedings of the Thirty-Fourth AAAI Conference on Artificial Intelligence (AAAI)*, New York City, NY, Vol. 34, No. 05, pp. 8894–8901, 2020. [Spotlight Presentation] Acceptance rate: $1591/7737 = 20.6\%$.
- [28] Sangwoo Cho,^S Muhammad Hasan Maqbool, Fei Liu and Hassan Foroosh. “**Self-Attention Network for Skeleton-based Human Action Recognition.**” In *Proceedings of the 2020 IEEE Winter Applications of Computer Vision Conference (WACV)*, pp. 635–644, 2020. Acceptance rate: $379/1096 = 34.5\%$.
- [29] Wei Zhao, Maxime Peyrard, Fei Liu, Yang Gao, Christian M. Meyer and Steffen Eger. “**MoverScore: Text Generation Evaluating with Contextualized Embeddings and Earth Mover Distance.**” In *Proceedings of the 2019 Conference on Empirical Methods in Natural Language Processing and the 9th International Joint Conference on Natural Language Processing (EMNLP)*, Hong Kong, China, pp. 563–578, 2019. [Oral Presentation] Acceptance rate: $683/2876 = 23.7\%$.

- [30] Sangwoo Cho,^S Chen Li, Dong Yu, Hassan Foroosh and Fei Liu. “[Multi-Document Summarization with Determinantal Point Processes and Contextualized Representations.](#)” In *Proceedings of the 2nd Workshop on New Frontiers in Summarization* at **EMNLP**, Hong Kong, China, pp. 98–103, 2019.
- [31] Logan Lebanoff,^S John Muchovej,^S Franck Dernoncourt, Doo Soon Kim, Seokhwan Kim, Walter Chang and Fei Liu. “[Analyzing Sentence Fusion in Abstractive Summarization.](#)” In *Proceedings of the 2nd Workshop on New Frontiers in Summarization* at **EMNLP**, Hong Kong, China, pp. 104–110, 2019.
- [32] Kristjan Arumae,^S Parminder Bhatia and Fei Liu “[Towards Annotating and Creating Sub-Sentence Summary Highlights.](#)” In *Proceedings of the 2nd Workshop on New Frontiers in Summarization* at **EMNLP**, Hong Kong, China, pp. 64–69, 2019.
- [33] Logan Lebanoff,^S Kaiqiang Song,^S Franck Dernoncourt, Doo Soon Kim, Seokhwan Kim, Walter Chang and Fei Liu. “[Scoring Sentence Singletons and Pairs for Abstractive Summarization.](#)” In *Proceedings of the 57th Annual Meeting of the Association for Computational Linguistics (ACL)*, Florence, Italy, pp. 2175–2189, 2019. Acceptance rate: 660/2905 = 22.7%.
- [34] Sangwoo Cho,^S Logan Lebanoff,^S Hassan Foroosh and Fei Liu. “[Improving the Similarity Measure of Determinantal Point Processes for Extractive Multi-Document Summarization.](#)” In *Proceedings of the 57th Annual Meeting of the Association for Computational Linguistics (ACL)*, Florence, Italy, pp. 1027–1038, 2019. [Oral Presentation] Acceptance rate: 660/2905 = 22.7%.
- [35] Kristjan Arumae^S and Fei Liu. “[Guiding Extractive Summarization with Question-Answering Rewards.](#)” In *Proceedings of the 2019 Annual Conf. of the North American Chapter of the Association for Computational Linguistics (NAACL)*, Minneapolis, Minnesota, pp. 2566–2577, 2019. [Oral Presentation] Acceptance rate: 423/1733 = 24.4%.
- [36] Logan Lebanoff,^S Kaiqiang Song^S and Fei Liu. “[Adapting the Neural Encoder-Decoder Framework from Single to Multi-Document Summarization.](#)” In *Proceedings of the 2018 Conference on Empirical Methods in Natural Language Processing (EMNLP)*, Brussels, Belgium, pp. 4131–4141, 2018. Acceptance rate: 351/1376=25.5%.
- [37] Logan Lebanoff^S and Fei Liu. “[Automatic Detection of Vague Words and Sentences in Privacy Policies.](#)” In *Proceedings of the 2018 Conference on Empirical Methods in Natural Language Processing (EMNLP)*, Brussels, Belgium, pp. 3508–3517, 2018. Acceptance rate: 351/1376=25.5%.
- [38] Kexin Liao,^S Logan Lebanoff^S and Fei Liu. “[Abstract Meaning Representation for Multi-Document Summarization.](#)” In *Proceedings of the 27th International Conference on Computational Linguistics (COLING)*, Santa Fe, New-Mexico, pp. 1178–1190, 2018. [Oral Presentation] **Area Chair Favorite Paper**, Acceptance rate: 44/888=5%.
- [39] Kaiqiang Song^S and Fei Liu. “[Structure-Infused Copy Mechanisms for Abstractive Summarization.](#)” In *Proceedings of the 27th International Conference on Computational Linguistics (COLING)*, Santa Fe, New-Mexico, pp. 1717–1729, 2018. [Oral Presentation] Acceptance rate: 331/888=37%.
- [40] Kristjan Arumae^S and Fei Liu. “[Reinforced Extractive Summarization with Question-Focused Rewards.](#)” In *Proceedings of the 56th Annual Meeting of the Association for Computational Linguistics (ACL), Student Research Workshop*, Melbourne, Australia, pp. 105–111, 2018.
- [41] Yanshan Wang, Sijia Liu, Majid Rastegar-Mojarad, Liwei Wang, Feichen Shen, Fei Liu, Hongfang Liu. “[Dependency and AMR Embeddings for Drug-Drug Interaction Extraction from Biomedical Literature.](#)” In *Proceedings of the 8th ACM International Conference on Bioinformatics, Computational Biology, and Health Informatics (ACM-BCB)*, Boston, Massachusetts, pp. 36–43, 2017.
- [42] Kristjan Arumae,^S Guo-Jun Qi and Fei Liu. “[A Study of Question Effectiveness Using Reddit ‘Ask](#)

- [Me Anything' Threads.](#)" In *Proceedings of the 30th Florida Artificial Intelligence Research Society Conference (FLAIRS)*, Marco Island, Florida, pp. 26–31, 2017.
- [43] Sansiri Tarnpradab,^S Fei Liu and Kien Hua. "[Toward Extractive Summarization of Online Forum Discussions via Hierarchical Attention Networks.](#)" In *Proceedings of the 30th Florida Artificial Intelligence Research Society Conference (FLAIRS)*, Marco Island, Florida, pp. 288–292, 2017.
- [44] Shomir Wilson, Florian Schaub, Rohan Ramanath, Norman Sadeh, Fei Liu, Noah A. Smith, and Frederick Liu. "[Crowdsourcing Annotations for Websites' Privacy Policies: Can It Really Work?](#)" In *Proceedings of the 25th International World Wide Web Conference (WWW)*, Montreal, Canada, pp. 133–143, 2016. [Oral Presentation] **Best Paper Finalist**, Acceptance rate: 5/727=0.7%.
- [45] Wencan Luo,^S Fei Liu, Zitao Liu and Diane Litman. "[Automatic Summarization of Student Course Feedback.](#)" In *Proceedings of the 15th Annual Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies (NAACL)*, San Diego, California, pp. 80–85, 2016. [Oral Presentation] Acceptance rate: 182/680=27%.
- [46] Wencan Luo^S, Fei Liu and Diane Litman. "[An Improved Phrase-based Approach to Annotating and Summarizing Student Course Responses.](#)" In *Proceedings of the 26th International Conference on Computational Linguistics (COLING)*, Osaka, Japan, pp. 53–63, 2016. [Oral Presentation] Acceptance rate: 337/1039=32.4%.
- [47] Fei Liu, Nicole Fella^S and Kexin Liao^S. "[Modeling Language Vagueness in Privacy Policies using Deep Neural Networks.](#)" In *Proceedings of the AAI 2016 Fall Symposium on Privacy and Language Technologies*, Washington, D.C., pp. 257–263, 2016. [Oral Presentation]
- [48] Dani Yogatama, Fei Liu and Noah A. Smith. "[Extractive Summarization by Maximizing Semantic Volume](#)". In *Proceedings of the 2015 Conference on Empirical Methods on Natural Language Processing (EMNLP)*, Lisboa, Portugal, pp. 1961–1966, 2015. Acceptance rate: 312/1300=24%.
- [49] Fei Liu, Jeffrey Flanigan, Sam Thomson, Norman Sadeh and Noah A. Smith. "[Toward Abstractive Summarization Using Semantic Representations.](#)" In *Proceedings of the North American Chapter of the Association for Computational Linguistics (NAACL)*, Denver, Colorado, pp. 1077–1086, 2015. [Oral Presentation] Acceptance rate: 186/714=26%.
- [50] Chen Li,^S Yang Liu, Fei Liu, Lin Zhao and Fuliang Weng. "[Improving Multi-document Summarization by Sentence Compression based on Expanded Constituent Parse Tree.](#)" In *Proceedings of the 2014 Conference on Empirical Methods on Natural Language Processing (EMNLP)*, Doha, Qatar, pp. 691–701, 2014. Acceptance rate: 225/790=28%.
- [51] Fei Liu, Rohan Ramanath,^S Norman Sadeh and Noah A. Smith. "[A Step Towards Usable Privacy Policy: Automatic Alignment of Privacy Statements.](#)" In *Proceedings of the 25th International Conference on Computational Linguistics (COLING)*, Dublin, Ireland, pp. 884–894, 2014. [Oral Presentation] Acceptance rate: 217/705=31%.
- [52] Rohan Ramanath,^S Fei Liu, Norman Sadeh and Noah A. Smith. "[Unsupervised Alignment of Privacy Policies using Hidden Markov Models.](#)" In *Proceedings of the 52nd Annual Meeting of the Association for Computational Linguistics (ACL)*, Baltimore, Maryland, pp. 605–610, 2014. Acceptance rate: 285/1123=25%.
- [53] Joel R. Reidenberg, Travis Breaux, Lorrie Faith Cranor, Brian French, Amanda Grannis, James T. Graves, Fei Liu, Aleecia M. McDonald, Thomas B. Norton, Rohan Ramanath, N. Cameron Russell, Norman Sadeh, and Florian Schaub. "[Disagreeable Privacy Policies: Mismatches between Meaning and Users' Understanding.](#)" In *Proceedings of 2014 TPRC: 42nd Research Conference on Communication,*

Information and Internet Policy (TPRC), Arlington, Virginia, 2014.

- [54] Rohan Ramanath^S, Florian Schaub, Shomir Wilson, Fei Liu, Norman Sadeh and Noah A Smith. “[Identifying Relevant Text Fragments to Help Crowdsource Privacy Policy Annotations.](#)” In *Proceedings of the Second AAAI Conference on Human Computation and Crowdsourcing (HCOMP)*, Pittsburgh, Pennsylvania, pp. 54–55, 2014
- [55] Norman Sadeh, Alessandro Acquisti, Travis D. Breaux, Lorrie Faith Cranor, Aleecia M. McDonald, Joel Reidenberg, Noah A Smith, Fei Liu, N. Cameron Russell, Florian Schaub, Shomir Wilson, James T. Graves, Pedro Giovanni Leon, Rohan Ramanath and Ashwini Rao. “[Towards Usable Privacy Policies: Semi-automatically Extracting Data Practices From Websites’ Privacy Policies.](#)” In *Symposium on Usable Privacy and Security (SOUPS)*, Menlo Park, California, 2014.
- [56] Chao Shen,^S Fei Liu, Fuliang Weng, and Tao Li. “[A Participant-based Approach for Event Summarization using Twitter Streams.](#)” In *Proceedings of the North American Chapter of the Association for Computational Linguistics (NAACL)*, Atlanta, Georgia, pp. 1152–1162, 2013. [Oral Presentation] Acceptance rate: 146/455=32%.
- [57] Chen Li,^S Fei Liu, Fuliang Weng and Yang Liu, “[Document Summarization via Guided Sentence Compression.](#)” In *Proceedings of the 2013 Conference on Empirical Methods in Natural Language Processing (EMNLP)*, Seattle, Washington, pp. 490–500, 2013. Acceptance rate: 205/772=27%.
- [58] Fei Liu, Fuliang Weng and Xiao Jiang^S. “[A Broad-coverage Normalization System for Social Media Language.](#)” In *Proceedings of the 50th Annual Meeting of the Association for Computational Linguistics (ACL)*, Jeju Island, South Korea, pp. 1035–1044, 2012. Acceptance rate: 187/940=20%.
- [59] Fei Liu, Fuliang Weng, Bingqing Wang, and Yang Liu, “[Insertion, Deletion, or Substitution? Normalizing Text Messages without Pre-categorization nor Supervision.](#)” In *Proceedings of the 49th Annual Meeting of the Association for Computational Linguistics (ACL)*, Portland, Oregon, pp. 71–76, 2011. [Oral Presentation] Acceptance rate: 292/1146=25%.
- [60] Feifan Liu, Fei Liu, and Yang Liu. “[Learning from Chinese-English Parallel Data for Chinese Tense Prediction.](#)” In *Proceedings of the International Joint Conference on Natural Language Processing (IJCNLP)*, Chiang Mai, Thailand, pp. 1116–1124, 2011. Acceptance rate: 176/478=36%.
- [61] Fei Liu, Yang Liu and Fuliang Weng. “[Why is ‘SXSW’ Trending? Exploring Multiple Text Sources for Twitter Topic Summarization.](#)” In *Proceedings of the ACL Workshop on Language and Social Media*, Portland, Oregon, pp. 66–75, 2011.
- [62] Fei Liu and Yang Liu. “[Exploring Speaker Characteristics for Meeting Summarization.](#)” In *Proceedings of the 11th Annual Conference of the International Speech Communication Association (INTERSPEECH)*, Makuhari, Japan, pp. 1–4, 2010. Acceptance rate: 771/1324=58%.
- [63] Yang Liu, Shasha Xie and Fei Liu. “[Using N-best Recognition Output for Extractive Summarization and Keyword Extraction in Meeting Speech.](#)” In *Proceedings of the 2010 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, Dallas, Texas, March 2010. Acceptance rate: 1356/2855=48%.
- [64] Fei Liu and Yang Liu. “[Using Spoken Utterance Compression for Meeting Summarization: A Pilot Study.](#)” In *Proceedings of the 2010 IEEE Workshop on Spoken Language Technology (IEEE SLT)*, Berkeley, California, pp. 37–42, 2010.
- [65] Fei Liu and Yang Liu. “[From Extractive to Abstractive Meeting Summaries: Can It be Done by Sentence Compression?](#)” In *Proceedings of the 47th Annual Mtg. of the Association for Computational Linguistics (ACL)*, Singapore, pp. 261–264, 2009. [Oral Presentation] Acceptance rate: 214/925=23%.

- [66] Feifan Liu, Deana Pennell, Fei Liu and Yang Liu. “[Unsupervised Approaches to Automatic Keyword Extraction Using Meeting Transcripts.](#)” In *Proceedings of the North American Chapter of the Association for Computational Linguistics (NAACL)*, Boulder, Colorado, pp. 620–628, 2009. [Oral Presentation] Acceptance rate: 146/438=33%.
- [67] Fei Liu, Feifan Liu and Yang Liu. “[Automatic Keyword Extraction for the Meeting Corpus Using Supervised Approach and Bigram Expansion.](#)” In *Proceedings of the IEEE Workshop on Spoken Language Technology (IEEE SLT)*, Goa, India, pp. 181–184, 2008.
- [68] Fei Liu and Yang Liu. “[What are Meeting Summaries? An Analysis of Human Extractive Summaries in Meeting Corpus.](#)” In *Proceedings of the 9th SIGDIAL Conference on Discourse and Dialogue (SIGDIAL)*, Columbus, Ohio, pp. 80–83, 2008.
- [69] Junkuo Cao, Lide Wu, Xuanjing Huang, Yaqian Zhou and Fei Liu. “[Using Multiple Combined Ranker for Answering Definitional Questions.](#)” In *Proceedings of the 4th Asia Information Retrieval Symposium (AIRS)*, Harbin, China, pp. 448–453, 2008.

Patents

- [70] Fuliang Weng, Xu Kui, Fei Liu, Lin Zhao, Zhe Feng and Zhongnan Shen. “[System And Method For Dialog-Enabled Context-Dependent and User-Centric Content Presentation.](#)” Applications US15/104,695, EP14872078.2A, CN201480076121.2A, PCT/US2014/069692. Filed by Robert Bosch LLC, December 2014. US 10,209,853 B2. **Granted**, February 2019.
- [71] Fei Liu, Fuliang Weng, Chao Shen and Lin Zhao. “[System and Method for Event Summarization Using Observer Social Media Messages.](#)” Applications US14/105,233, EP13818081.5A, PCT/US2013/074929. Filed by Robert Bosch LLC, December 2013. US 10,224,025 B2. **Granted**, March 2019.
- [72] Fei Liu and Fuliang Weng. “[Broad-Coverage Normalization System for Social Media Language.](#)” Application US13/779,083. Filed by Robert Bosch LLC, February 2013. US 9,164,983 B2. **Granted**, October 2015.
- [73] Fei Liu and Fuliang Weng. “[Method and System for Text Message Normalization Based on Character Transformation and Web Data.](#)” Applications US13/117,330, CN201280036746.7A, EP12725208.8A, PCT/US2012/038870. Filed by Robert Bosch LLC, May 2011.

Technical Reports

- [74] Norman Sadeh, Alessandro Acquisti, Travis Breaux, Lorrie Cranor, Aleecia M. McDonald, Joel Reidenberg, Noah A. Smith, **Fei Liu**, N. Cameron Russel, Florian Schaub, Shomir Wilson. “[The Usable Privacy Policy Project: Combining Crowdsourcing, Machine Learning and Natural Language Processing to Semi-automatically Answer Those Privacy Questions Users Care About](#)”. *Technical Report CMU-ISR-13-119*, Carnegie Mellon University.

INVITED TALKS

- [1] Artificial Intelligence and the Future of Higher Education. Invited Panelist, with Lauren Klein, Matthew Sag and Phillip Wolff, Center for Faculty Development and Excellence, *Emory University*, March 2023
- [2] Towards Automatic Transcript Summarization: Challenges and Opportunities, Keynote Speech. First Workshop on Transcript Understanding, *COLING*, October 2022
- [3] Towards Automatic Transcript Summarization: Challenges and Opportunities, Center of Biomedical and Health Research in Data Sciences (CHORDS), *University of Massachusetts*, November 2022

- [4] Towards Automatic Transcript Summarization: Challenges and Opportunities, *BOSCH Research and Technology Center*, Sunnyvale, California, July 2022
- [5] Toward Robust Abstractive Multi-Document Summarization and Information Consolidation, Speech, Audio, Music Intelligence (SAMI), *TikTok Inc.*, Mountain View, California, July 2022
- [6] Toward Robust Abstractive Multi-Document Summarization and Information Consolidation, *Meta Inc.*, Menlo Park, California, July 2022
- [7] Toward Robust Abstractive Multi-Document Summarization and Information Consolidation. Computer Science Colloquium, *Rice University*, December 2021
- [8] Toward Robust Abstractive Multi-Document Summarization and Information Consolidation. Computer Science Seminar, *Emory University*, September 2021
- [9] Toward Robust Abstractive Multi-Document Summarization and Information Consolidation. *Google Research*, London, April, 2021
- [10] Toward Robust Abstractive Multi-Document Summarization and Information Consolidation. *Microsoft Cognitive Services Research Group*, October, 2020
- [11] Toward Robust Abstractive Multi-Document Summarization and Information Consolidation. *Qualtrics*, Machine Learning and Artificial Intelligence R&D, September 2021
- [12] Toward Robust Abstractive Multi-Document Summarization and Information Consolidation. CS Colloquium, *Georgetown University*, October, 2020
- [13] Toward Robust Abstractive Multi-Document Summarization and Information Consolidation. *DARPA ISAT Multi-Modal Understanding and Summarization (MuMUS) of Critical Events Workshop*, Philadelphia, Pennsylvania, October, 2019
- [14] How Do We Handle Errors in Summarization? *DARPA ISAT Multi-Modal Understanding and Summarization (MuMUS) of Critical Events Workshop*, Philadelphia, Pennsylvania, October, 2019
- [15] Toward Robust Abstractive Multi-Document Summarization and Information Consolidation. *Bloomberg L.P.*, New York City, NY, August, 2019
- [16] Toward Deep Abstractive Summarization Using Meaning Representations. *The ACL Workshop on Designing Meaning Representations*, Florence, Italy, August, 2019
- [17] Toward Robust Abstractive Multi-Document Summarization and Information Consolidation. *Facebook*, Menlo Park, California, July, 2019
- [18] Toward Robust Abstractive Multi-Document Summarization and Information Consolidation. *Adobe Research*, San Jose, California, June, 2019
- [19] Abstractive Multi-Document Summarization: Opportunities and Challenges. *Dagstuhl Seminar on Multi-document Information Consolidation*, Dagstuhl, Germany, May 2019.
- [20] Incorporating Linguistic Structure in Neural Abstractive Summarization. Ubiquitous Knowledge Processing (UKP) Lab, *Technische Universität Darmstadt*, Darmstadt, Germany, April 2019.
- [21] Incorporating Linguistic Structure in Neural Abstractive Summarization. *Adobe Research*, San Jose, California, September 2018.
- [22] Incorporating Linguistic Structure into Neural Abstractive Summarization Systems. *BOSCH Research and Technology Center*, Sunnyvale, California, September 2018.
- [23] Deep Learning for Natural Language Processing: Summarization and Language Vagueness. Faculty Networking Seminar, *Tulane University*, New Orleans, Louisiana, February 2017.

- [24] Deep Learning for Natural Language Processing: Summarization and Language Vagueness. *BOSCH Research and Technology Center*, Palo Alto, California. January 2017.
- [25] Summarizing Information in Big Data: Algorithms and Applications. *Florida Institute for Human and Machine Cognition (IHMC)*, Ocala, Florida, September 2016.
- [26] Toward Abstractive Summarization Using Semantic Representations. *MIT Rising Stars in EECS An Academic Career Workshop*, Cambridge, Massachusetts, November 2015.
- [27] Summarizing Information in Big Data: Algorithms and Applications. CSEE Department, *University of Maryland, Baltimore County*, March 2015.
- [28] Summarizing Information in Big Data: Algorithms and Applications. CS Department, *University of Central Florida*, Orlando, Florida, April 2015.
- [29] Summarizing Information in Big Data: Algorithms and Applications. NLP+CL Seminar, *Carnegie Mellon University*, Pittsburgh, Pennsylvania, February 2015.
- [30] Summarizing Information in Big Data: Algorithms and Applications. CS Department, *City University of New York*, New York City, New York, March 2015.
- [31] Automatic Summarization for Multiple Text Genres: Algorithms and Applications. CS Colloquium, *University of Pittsburgh*, Pittsburgh, Pennsylvania, November 2014.
- [32] Comprehending Social Media Text: Normalization and Summarization. Natural Language Processing Group, *Columbia University*, New York City, New York, June 2013.
- [33] Future Research Directions for NLP. Student Research Workshop at NAACL. Invited panelist, Atlanta, Georgia, June 2013.

PROFESSIONAL ACTIVITIES

Organizing Committee

Area chair, Conference on Computational Natural Language Learning (**CoNLL 2023**)

Senior area chair / Session chair, Conf. on Empirical Methods in Natural Language Proc. (**EMNLP 2022**)

Area chair / Session chair, The 29th International Conf. on Computational Linguistics (**COLING 2022**)

Senior area chair / Session chair, Asia-Pacific Chapter of the Association for Comp. Ling. (**AAACL 2022**)

Area chair, The 15th International Natural Language Generation Conference (**INLG 2022**)

Senior program committee, The Thirty-Sixth AAAI Conf. on Artificial Intelligence (**AAAI 2022**)

Senior area chair, 2021 Conf. on Empirical Methods in Natural Language Proc. (**EMNLP 2021**)

Area chair / Session chair, The 59th Annual Meeting of the Association for Comp. Ling. (**ACL 2021**)

Area chair / Session chair, North American Chapter of the Association for Comp. Lin. (**NAACL 2021**)

Area chair, European Chapter of the Association for Computational Linguistics (**EACL 2021**)

General publication chair, 2020 Conf. on Empirical Methods in Natural Language Proc. (**EMNLP 2020**)

Senior area chair, Annual Conference of the Association for Computational Linguistics (**ACL 2020**)

Senior program committee, The Thirty-Fourth AAAI Conf. on Artificial Intelligence (**AAAI 2020**)

Publication co-chair, The 2019 Conference on Empirical Methods in Natural Language Processing and 9th International Joint Conference on Natural Language Processing (**EMNLP 2019**)

Area chair / Session chair, The 57th Annual Meeting of the Association for Comp. Ling. (**ACL 2019**)

Area chair / Session chair, The 2019 Annual Conference of the North American Chapter of the Association for Computational Linguistics (**NAACL-HLT 2019**)

Demonstrations chair, The 56th Annual Meeting of the Association for Comp. Ling. (**ACL 2018**)
Area chair / Session chair, 2018 Conf. on Empirical Methods in Natural Lang. Proc. (**EMNLP 2018**)
Area chair, The 8th International Joint Conference on Natural Language Processing (IJCNLP 2017)
Area chair, CCF Intl. Conf. on Natural Language Proc. and Chinese Computing (NLPCC 2017)
Workshop co-organizer, New Frontiers in Summarization, (**EMNLP 2017, 2019, 2021**)
Session chair, The 15th Annual Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies (**NAACL-HLT 2016**)
Workshop co-organizer, AAAI 2016 Fall Symposium on Privacy and Language Technologies
Session chair, The 2015 Annual Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies (**NAACL-HLT 2015**)
Session chair, The 2015 Conference of the Association for Computational Linguistics (**ACL 2015**)
Area chair, The Annual Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies (**NAACL-HLT 2015**)

Journal Editorial

Action editor, Transactions of the Association for Computational Linguistics (TACL), 2022–2024
Associate editor, ACM Transactions on Asian and Low-Resource Language Info. Processing, 2019–2021
Standing review committee, Transactions of the Association for Computational Linguistics, 2018–2022

Journal Referee

Journal of Artificial Intelligence Research (JAIR), 2015, 2018, 2019, 2021
ACM/IEEE Transactions on Audio, Speech and Language Processing, 2011–2012, 2019
ACM Transactions on Asian and Low-Resource Language Information Processing, 2013–14, 2016, 2018
Natural Language Engineering, 2013–2014, 2016
Computer Speech & Language, 2016
Computational Linguistics, 2015
IEEE Transactions on Knowledge and Data Engineering, 2014–2015
ACM Transactions on Knowledge Discovery from Data, 2013–2014
Speech Communication, 2013
ACM Transactions on Speech and Language Processing, 2012
Data & Knowledge Engineering Journal, 2011–2012

Conference Program Committee

Annual Meeting of the Association for Computational Linguistics (**ACL**), 2012–2022
Conference on Empirical Methods on Natural Language Processing (**EMNLP**), 2013, 2015–2022
North American Chapter of the Association for Computational Linguistics (**NAACL-HLT**), 2015–2022
International Conference on Computational Linguistics (**COLING**), 2018, 2020, 2022
Annual Conference on Neural Information Processing Systems (**NeurIPS**), 2015–2016, 2018–2019
European Chapter of the Association for Computational Linguistics (**EACL**), 2012, 2017, 2021
International Conference on Machine Learning (**ICML**), 2015–2017
AAAI Conference on Artificial Intelligence (**AAAI**), 2013, 2016–2017, 2019
International Joint Conference on Artificial Intelligence (**IJCAI**) 2013, 2016, 2020

ACM International Conference on Information and Knowledge Management (**CIKM**), 2013, 2016
IEEE International Conference on Data Mining (**ICDM**) PhD Forum, 2015
ACM SIGKDD Conference on Knowledge Discovery and Data Mining (**KDD**) 2012–2015
International Conference on Acoustics, Speech, and Signal Processing (**ICASSP**) 2012–2013
NAACL Student Research Workshop (SRW) 2013, 2015–2016
AAAI Spring Symposium: Analyzing Microtext, 2013
Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD), 2013–2015
Asia Information Retrieval Societies Conference (AIRS), 2012
International Joint Conference on Natural Language Processing (IJCNLP), 2011
ACL Workshop on Automatic Summarization for Different Genres, Media, and Languages, 2011

Service to Government Agencies

Panelist/Ad-hoc grant reviewer, CISE/IIS, National Science Foundation, 2016, 2019–2023
Grant reviewer, Israel Science Foundation (ISF), 2021
Grant reviewer, Research Grants Council of Hong Kong, 2020
Grant reviewer, CORE Programme, Luxembourg National Research Fund, 2018
Grant reviewer, Government grant, Autonomous Province of Bolzano, Italy, 2015

Service to the Department

SERVICE PERFORMED AT EMORY U

Graduate Admissions Committee Member: Actively participated in the selection of prospective students, contributing to the admissions process by reviewing applications, conducting interviews, and providing insightful feedback during committee meetings, 2022-2023

Actively engaged in faculty hiring by assessing candidates' qualifications, conducting interviews, and promoting the department's values to foster a sense of community, 2022-2023

SERVICE PERFORMED AT UCF

Executive committee member, Artificial Intelligence Initiative, a University-wide initiative funded by President Cartwright under the Academic Excellence Program, 2022

CS graduate committee member, 2016–2017, 2017–2018

Faculty advisor, UCF IoT-REU Program (2015–2018); EXCEL/COMPASS Undergraduate Research Experience (URE) Program (2016–present); Flit-Path Program (2016–2021); Flit-GAP Program (2021–2022)

Participated in the faculty search process to meet with faculty candidates (2016) and evaluate Learning Sciences Cluster faculty candidates, 2018–2019

Faculty mentor and final presentation committee member, CS Senior Design II, 2015

Faculty advisor, CS undergraduate student advising at UCF (2016–2022, 63 students)

Advised students: Jon Guilbe (2016); Sandy Demian (2017); Krystal Siler (2017); Masaki Hook (2017); Nicolas Derosa (2017); Jacqueline Meulen (2017); James Anderson (2017); Jacqueline DeSanto (2018); Misty Au (2018); Dylan Roberts (2018); Rolando Murillo (2018); Bryce Vichi (2018); Haley Meaghan (2018); Elaine Ng (2018); Elena Berisha (2018); Jamil Gonzalez (2019); Matthew Reid (2019); Toan Vu (2019); Ben Buzzelli (2019); Levi Huchingson (2019); Alexandra Arriola (2019); Eryn Elstrom (2019); Desiree Wood (2019); Amber Hoekstra (2019); Ariane Avendano (2019); Michaela Green (2019); Caroline Nejedlo (2019); Samantha Del Rosario (2019); Shyam Parikh (2020); Camila La Rosa (2020); Patrick Bauer (2020); Allison Brignol (2020); Fiona Barry (2020); Ethan Pittman (2020); Ashley Voglewede (2020); Alexa

Keene (2020); Paola Canales (2020); Hannah Graves (2020); Brandon Spangler (2020); Denae Miller (2020); Jordyn Lally (2020); Sophia Guelfi (2021); Kayla Marcantonio (2021); Mina Beshay (2021); Samuel Van Duyn (2021); Julia De Macedo Soares Da Silva (2021); Sabrina Lopez (2021); Arianna Walters (2021); Chelsea Oshodi (2021); Julia Vann (2021); Riya Singh (2021); Sara Betancourth (2021); Jennifer Nguyen (2021); Alicia Hassan (2021); Alisa Alarcon-Cometta (2021); Dahlia La Pommeray (2021); Rachel Schwarz (2022); Graciela Birket (2022); Gabrielle Mejia (2022); Amasha Rajaguru (2022); Maggie LaFratta (2022); Natali Siam-Pollo (2022); Matthew Meyers (2022)

Dissertation/Thesis Committee

James Finch (Ph.D., Emory U, expected N/A); Ramraj Chandradevan (Ph.D., Emory U, expected N/A); Sarah Fillwock (Ph.D., Emory U, expected N/A); Jiaying Lu (Ph.D., Emory U, expected N/A); Han He (Ph.D., Emory U, defended Spring 2023); Ayesha Enayet (Ph.D., UCF, defended Spring 2023); Muhammad Hasan Maqbool (Ph.D., UCF, expected N/A); Sina Lotfian (Ph.D., UCF, expected N/A); Sansiri Tarnpradab (Ph.D., UCF, defended Summer 2022); Will Holdren (M.S., UCF, graduated Spring 2022); Kevin Duarte (Ph.D., UCF, defended Fall 2021); Amlan Talukder (Ph.D., UCF, defended Spring 2021); Liheng Zhang (Ph.D., UCF, defended Spring 2020); Amir Mazaheri (Ph.D., UCF, defended Spring 2020); Josiah Wong (Ph.D., UCF, defended Fall 2019); Navid Kardan (Ph.D., UCF, defended Summer 2019); Hao Hu (Ph.D., UCF, defended Spring 2019); Awrad Mohammed Ali (Ph.D., UCF, defended Spring 2019); Yicong Tian (Ph.D., UCF, defended Fall 2018); Mahlagha Sedgi (M.S., UCF, graduated in 2017); Xuhong Zhang (Ph.D., UCF, defended Fall 2017); Wencan Luo (Ph.D., U of Pittsburgh, defended Spring 2017)

STUDENT ADVISEES

Students supervised by Dr. Liu @Emory University

Yebowen Hu (08/21–Present), remote Ph.D. student, University of Central Florida
Pengshan Cai (09/20–Present), remote Ph.D. student, University of Massachusetts, Amherst
Haoming Li (05/23–Present), M.S. student, Emory University
Zhexuan Li (05/23–Present), M.S. student, Emory University

Students supervised by Dr. Liu @University of Central Florida

Kaiqiang Song (08/16–05/21), Ph.D. student [12][16][22][26][27][39]
Sangwoo Cho (06/18–05/21), Ph.D. student [9][14][21][30][34], co-supervised with Hassan Foroosh
Alexander Roustai, (01/20–05/21), M.S. student [17][23]
Employment: Naval Air Warfare Center Training Systems Division (NAWCTSD)
Stephen Maldonado (11/20–05/22), B.S. student
Jia Jin Koay (09/19–02/21), B.S. student [17][23], Employment: Meta Inc.
Xiaojin Dai (09/19–02/21), B.S., Flit-Path program [17][23]
Logan Lebanoff (01/17–12/20), Ph.D. student [19][20][25][31][33][36][37]
Kristjan Arumae (01/16–05/19), M.S. student [32][35][40][42], Employment: Amazon, Seattle
Sansiri Tarnpradab (10/15–12/16), Ph.D. student [43], co-advised with Kien Hua
Kexin Liao (01/16–05/18), M.S. student [38][47]. Employment: JD.com
Jongho Cha (01/16–05/16), M.S. student, Directed research.
Employment: Ministry of National Defense (South Korea)
Ray Ruitao Yan (05/17–08/17), B.S. student, Purdue University, IOTREU Program

Kevin Negy (08/16–12/16), B.S. student, Undergrad research. Interned at Florida IHMC
Now PhD Student at Cornell University

Clayton Barham (05/16–12/16), B.S. student, Undergrad research

Kylie McCarty (01/16–05/16), B.S. student, Undergrad research

Nicole Fella (05/16–08/16), B.S. student [47], Manhattan College, IOTREU Program
Employment: Software Developer at Morgan Stanley

Students supervised by Dr. Liu @Carnegie Mellon University

Eric Lee (01/14–05/14), Carnegie Mellon University, Employment: Google Inc.

Rohan Ramanath (12/13–07/14) [51][52][54], Carnegie Mellon University, Employment: LinkedIn Corp

Wencan Luo (10/14–05/17) [2][45][46], University of Pittsburgh, Employment: Google, Pittsburgh

Students supervised by Dr. Liu @BOSCH Research and Technology Center

Chen Li (05/13–08/13) [50][57], University of Texas at Dallas, Employment: Microsoft

Chao Shen (05/12–08/12, 05/13–08/13) [56], Florida International University, Employment: Google Inc.

Xiao Jiang (10/11–08/12) [58], Cambridge University, Employment: Facebook, London