Binxuan Huang

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Research Interests

Natural Language Processing, Social Network Analysis, Deep Learning, Machine Learning

Education

Carnegie Mellon University *Pittsburgh, U.S.*
Ph.D., Computer Science, advised by Prof. Kathleen M. Carley *Expected 2020*
Zhejiang University *Hangzhou, China*
B.S., Physics *2015*
B.E., Computer Science *2015*

Experience

Applied Scientist Intern *Amazon Alexa AI, 2019.5 - 2019.8*
Mentor: Dr. Han Wang
- Built an entity linking system over the entire Amazon music knowledge graph
- Proposed a novel multi-grained matching approach to improve Alexa's NLU performance with knowledge graph (paper coming soon).

Research Assistant *CASOS, Carnegie Mellon University, 2015-Present*
Advisor: Prof. Kathleen M. Carley
- Proposed multiple methods for semantic modeling sentence pairs, with an application on aspect-level sentiment classification [EMNLP'19, EMNLP'18, SBP-BRiMS'18].
- Modeling social media users with various types of features, eg. text, categorical features, network, for user attributes prediction [EMNLP'19, TNSE'18, SBP-BRiMS'17, CIKM'17].
- Developed a high throughput tweet collection system. Collected and analyzed more than 40 billion tweets (16TB after compression) from 20 million users using Spark [ASONAM'19, ASONAM'17]

Research Assistant *AI Lab, Zhejiang University, 2014-2015*
Advisor: Prof. Xiaogang Jin
- Conducted research on analyzing Wikipedia editing pattern.

Publications

Peer-Reviewed Papers

- **Binxuan Huang**, and Kathleen M. Carley. "Syntax-Aware Aspect Level Sentiment Classification with Graph Attention Networks." In Proceedings of the Conference on Empirical Methods in Natural Language Processing (EMNLP), 2019.
- **Binxuan Huang**, and Kathleen M. Carley. "A Hierarchical Location Prediction Neural Network for Twitter User Geolocation." In Proceedings of the Conference on Empirical Methods in Natural Language Processing (EMNLP), 2019.

- **Binxuan Huang**, and Kathleen M. Carley. "A Large-Scale Empirical Study of Geotagging Behavior on Twitter." In Proceedings of the International Conference on Advances in Social Networks Analysis and Mining (ASONAM), 2019
- **Binxuan Huang**, and Kathleen M. Carley. "Location Order Recovery in Trails with Low Temporal Resolution." IEEE Transactions on Network Science and Engineering (TNSE) ,2018.
- **Binxuan Huang**, and Kathleen Carley. "Parameterized convolutional neural networks for aspect level sentiment classification." In Proceedings of the Conference on Empirical Methods in Natural Language Processing (EMNLP), 2018.
- **Binxuan Huang**, Yanglan Ou, and Kathleen M. Carley. "Aspect level sentiment classification with attention-over-attention neural networks." In International Conference on Social Computing, Behavioral-Cultural Modeling and Prediction and Behavior Representation in Modeling and Simulation (SBP-BRiMS), 2018.
- **Binxuan Huang**, and Kathleen M. Carley. "On predicting geolocation of tweets using convolutional neural networks." In International Conference on Social Computing, Behavioral-Cultural Modeling and Prediction and Behavior Representation in Modeling and Simulation (SBP-BRiMS), 2017.
- Yu Zhang, Wei Wei, **Binxuan Huang**, Kathleen M. Carley, and Yan Zhang. "RATE: Overcoming Noise and Sparsity of Textual Features in Real-Time Location Estimation." In Proceedings of the Conference on Information and Knowledge Management (CIKM), 2017
- Felicia Natali, Kathleen M. Carley, Feida Zhu, and **Binxuan Huang**. "The role of different tie strength in disseminating different topics on a microblog." In Proceedings of the International Conference on Advances in Social Networks Analysis and Mining (ASONAM), 2017

Technical Reports

- William Frankenstein, **Binxuan Huang**, and Kathleen M. Carley. "NATO Trident Juncture on Twitter: Public Discussion." Available at SSRN 2720320 (2016).

Preprints

- Tai-Long He, Dylan Jones, **Binxuan Huang**, Yuyang Liu, Kazuyuki Miyazaki, Zhe Jiang, E. Charlie White, Helen M. Worden, and John R. Worden. "Recurrent U-net: Deep learning to predict daily summertime ozone in the United States." arXiv preprint arXiv:1908.05841 (2019).
- **Binxuan Huang**, and Kathleen M. Carley. "Residual or Gate? Towards Deeper Graph Neural Networks for Inductive Graph Representation Learning." arXiv preprint arXiv:1904.08035 (2019).
- Yujie Qian, Jie Tang, Zhilin Yang, **Binxuan Huang**, Wei Wei, and Kathleen M. Carley. "A probabilistic framework for location inference from social media." arXiv preprint arXiv:1702.07281 (2017).

Talks

- A Large-Scale Empirical Study of Geotagging Behavior on Twitter, ASONAM 2019
- Syntax-Aware Aspect Level Sentiment Classification with Graph Attention Networks, Amazon Alexa AI, 2019/06
- Aspect Level Sentiment Classification with Attention-over-Attention Neural Networks, SBP-BRiMS 2018
- A Large-Scale Empirical Study of Geotagging Behavior on Twitter, CASOS Summer Institute,

2018/06

- On Predicting Geolocation of Tweets Using Convolutional Neural Networks, SBP-BRiMS 2017

Teaching

Teaching Assistant, Dynamic Network Analysis	*Spring, 2017 & 2018*
Teaching Assistant, CASOS Summer Institute	*June, 2016 & 2017 & 2018*
Teaching Assistant, Introduction to Computing System	*Summer, 2014*

Professional Service

- PC member for International Conference on Social Computing, Behavioral-Cultural Modeling & Prediction and Behavior Representation in Modeling and Simulation (SBP-BRiMS), 2019
- Reviewer for Annual Conference of the North American Chapter of the ACL (NAACL), 2019
- Reviewer for International AAAI Conference on Web and Social Media (ICWSM), 2019
- Reviewer for IEEE Intelligent Systems, 2019
- Reviewer for the journal of Neural Network, 2019
- Reviewer for Social Network Analysis and Mining , 2019
- Reviewer for IEEE Transactions on Network Science and Engineering, 2018
- Reviewer for Computational and Mathematical Organization Theory, 2018
- Reviewer for International Conference on Social Computing, Behavioral-Cultural Modeling & Prediction and Behavior Representation in Modeling and Simulation (SBP-BRiMS), 2018

Awards and Honors

SBP-BRiMS Travel Grant	*2017 & 2018*
GuSH Research Grant Awards	*2016*
National Scholarship of China (Top 2%, twice)	*2012 & 2013*
First-Class Scholarship for Outstanding Students (Top 3%, twice)	*2012 & 2013*
First-Class Scholarship for Outstanding Merits (Top 3%, twice)	*2012 & 2013*
Excellent Student Awards (Top 3%)	*2013*
First Prize of the National Talents Training Base (Top 3%)	*2012*
Scholarship for Excellence in Arts and Sports	*2012*

Graduate Coursework

Introduction to Machine Learning, Intermediate Statistics, Probabilistic Graphical Models, Dynamic Network Analysis, Computational Modeling, Convex Optimization, Deep Reinforcement Learning & Control, Deep Learning

Technical Skills

- Programming: Python(Extensive), C/C++, Java, Matlab
- Tools: Pytorch, Tensorflow, Spark, SQL, GraphFrames, Latex