

Zhili Feng

zhilif@andrew.cmu.edu

EDUCATION	Ph.D. in Machine Learning Carnegie Mellon University	Sept 2019 - Present
	Master of Science in Computer Science University of Wisconsin-Madison Thesis: <i>On the Geometric and Statistical Interpretation of Data Augmentation</i>	Sept 2017 - May 2019
	Bachelor of Science in Computer Science University of Illinois at Urbana-Champaign Thesis: <i>A Combination of Statistical Model and Rule-based Approach to Temporal Extraction and Normalization</i>	Aug 2013 - May 2017
TEACHING EXPERIENCE	Teaching Assistant University of Wisconsin-Madison <ul style="list-style-type: none">Teaching CS525 Linear Programming Methods	Jan 2019 - May 2019
	Teaching Assistant University of Wisconsin-Madison <ul style="list-style-type: none">Teaching CS525 Linear Programming Methods	Sept 2018 - Dec 2018
	Teaching Assistant University of Wisconsin-Madison <ul style="list-style-type: none">Teaching CS577 Introduction to Algorithms	Jan 2017 - May 2017
	Teaching Assistant University of Wisconsin-Madison <ul style="list-style-type: none">Teaching CS240 Introduction to Discrete Mathematics	Sept 2017 - Dec 2017
	Course Staff University of Illinois at Urbana-Champaign <ul style="list-style-type: none">Grading CS446 Machine Learning	Aug 2016 - Dec 2016
PUBLICATION	<ol style="list-style-type: none">Zhili Feng, Ezra Winston, and J Zico Kolter. Monotone deep boltzmann machines, 2022Zhili Feng and J Zico Kolter. On the neural tangent kernel of equilibrium models, 2021Zhili Feng, Shaobo Han, and Simon S Du. Provable adaptation across multiway domains via representation learning. <i>arXiv preprint arXiv:2106.06657</i>, 2021Zhili Feng, Fred Roosta, and David P Woodruff. Non-psd matrix sketching with applications to regression and optimization. <i>arXiv preprint arXiv:2106.08544</i>, 2021Jon Ergun, Zhili Feng, Sandeep Silwal, David P Woodruff, and Samson Zhou. Learning-augmented k-means clustering. <i>arXiv preprint arXiv:2110.14094</i>, 2021Zhili Feng, Praneeth Kacham, and David Woodruff. Dimensionality reduction for the sum-of-distances metric. In <i>International Conference on Machine Learning</i>, pages 3220–3229. PMLR, 2021	

7. Shashank Rajput, Zhili Feng, Zachary B. Charles, Po-Ling Loh, and Dimitris S. Papailiopoulos. Does data augmentation lead to positive margin? In *Proceedings of the 36th International Conference on Machine Learning, ICML 2019, 9-15 June 2019, Long Beach, California, USA*, pages 5321–5330, 2019
8. Z. Feng and P. Loh. Online learning with graph-structured feedback against adaptive adversaries. In *2018 IEEE International Symposium on Information Theory (ISIT)*, pages 931–935, June 2018
9. Qiang Ning, Zhili Feng, Hao Wu, and Dan Roth. Joint Reasoning for Temporal and Causal Relations. In *Proc. of the Annual Meeting of the Association for Computational Linguistics (ACL)*, pages 2278–2288, Melbourne, Australia, 7 2018. Association for Computational Linguistics
10. Qiang Ning, Ben Zhou, Zhili Feng, Haoruo Peng, and Dan Roth. CogCompTime: A Tool for Understanding Time in Natural Language. In *EMNLP (Demo Track)*, Brussels, Belgium, 11 2018. Association for Computational Linguistics
11. Daniel Khashabi, Mark Sammons, Ben Zhou, Tom Redman, Christos Christodoulopoulos, Vivek Srikumar, Nicholas Rizzolo, Lev Ratinov, Guanheng Luo, Quang Do, Chen-Tse Tsai, Subhro Roy, Stephen Mayhew, Zhili Feng, John Wieting, Xiaodong Yu, Yangqiu Song, Shashank Gupta, Shyam Upadhyay, Naveen Arivazhagan, Qiang Ning, Shaoshi Ling, and Dan Roth. CogCompNLP: Your Swiss Army Knife for NLP. In *Proc. of the International Conference on Language Resources and Evaluation (LREC)*, 2018
12. Qiang Ning, Zhili Feng, and Dan Roth. A structured learning approach to temporal relation extraction. In *EMNLP*, Copenhagen, Denmark, 9 2017

RESEARCH EXPERIENCE

Research Assistant

Sept 2010 - Present

Advised by Professor David Woodruff
Carnegie Mellon University

- Develop algorithm to construct strong coresets for machine learning or computer science tasks including k -median, k -means, and subspace approximation
- Construct coresets in streaming models

Advised by Professor Zico Kolter
Carnegie Mellon University

- Study neural tangent kernels for deep equilibrium models and their convergence properties
- Develop deep equilibrium model for mean-field inference

Research Assistant

Aug 2017 - May 2019

Advised by Professor Po-Ling Loh
University of Wisconsin-Madison

- Study various online learning models with different feedback structures, and against different adversaries
- Study the theoretical analysis of data augmentation

Undergraduate Research Assistant

Aug 2016 - Aug 2017

Advised by Professor Dan Roth
Cognitive Computation Group
University of Illinois at Urbana-Champaign

- Integrate HeidelTime into Illinois shallow parser to extract and normalize temporal expressions

- Create shallow parser for temporal extraction; create rule-based system for temporal normalization following TIMEX3 standard; combining temporal extractor and normalizer into CogComp pipeline
- Work on temporal reasoning related problems, focus on timeline construction, and exploit graph structures of events and time to reveal temporal relations

Undergraduate Research Assistant

Mar 2015 - Aug 2016

Advised by Professor Mani Golparvar-Fard

Real-time and Automated Monitoring and Control Lab

University of Illinois at Urbana-Champaign

- Use construction images collections, as-built model visualization, and Building Information Models (BIM) to automatically track construction progress
- Create JavaScript APIs to retrieve IFC (Industry Foundation Classes) files from BIMServer, create data structures, and store geometry information in these data structures
- Create JavaScript APIs to read data including vertices, normals, and colors from specific data structures, apply transformation matrices to the geometry, and use ThreeJS to render objects to the webpage
- Create scheduler for user to check the construction progress up to a certain time, and make queries correspondingly from the server

PROFESSIONAL SOFTWARE ENGINEERING INTERN EXPERIENCE

May 2017 - Aug 2017

Facebook, Menlo Park, CA

- Design systems that increase end-to-end test coverage for diffs
- Migrate test coverage data from MySQL to other scalable database, while preserving low read latency and data availability

Software Engineering Intern

May 2016 - Aug 2016

Facebook, Menlo Park, CA

- Use TF-IDF and cosine similarity to detect highly similar comments
- Use GBDT and Logistic Regression models to check ads quality
- Create ads under-delivery diagnostic tool using Hack and Scuba table

Software Engineering Intern

May 2015 - Aug 2015

Marketo, San Mateo, CA

- Create Java APIs to check list-importing progress. Use Hibernate ORM to map MySQL database to a Java DAO class and count number of lists being imported
- Create Java REST APIs which make queries through SOAP message senders to check the connection between Marketo and Microsoft Dynamics CRM. Use ExtJS to create the GUI and make AJAX calls to communicate with the back-end
- Use Mockito framework to create unit tests for all the APIs

HONOR & AWARDS

Dean's List

University of Illinois at Urbana-Champaign

- Fall 2013, Spring 2014, Fall 2014, Spring 2015, Spring 2016

Edmund J James Scholar

University of Illinois at Urbana-Champaign

- Academic Year 2013-2014