

CURRICULUM VITAE

CHENGXI ZANG

Population Health Sciences
Weill Cornell Medicine
Cornell University
425 E 61st St
New York, NY 10065

E-mail: chengxi.zang@gmail.com
chz4001@med.cornell.edu
Mobile: +1-212-920-0603
+86-13001286522
Web: www.calvinzang.com

SHORT BIOGRAPHY

Dr. Chengxi Zang (臧承熙) is currently a postdoctoral research associate in the Weill Cornell Medicine, Cornell University. He got his Ph.D. from Tsinghua University in January 2019 with an Excellent Ph.D. Dissertation Award in the Computer Science Department (top 3) and an Excellent Ph.D. Award in Tsinghua University (top 70/2279=3%). He has worked extensively on mining and learning the Structures and Dynamics of complex social and biological systems. For example, he studied the human and social dynamics of WeChat at a billion scale, and he also investigated millions of information cascades in Tencent Weibo. Currently, his focus is AI for Healthcare and Drug Discovery. His research won ICDM'18 Best Paper Candidate and Best Paper Award at AAAI'20 Workshop on Deep Learning on Graphs.

RESEARCH INTERESTS

- Graph Neural Networks, Graph Mining, Structured and Dynamic Data;
- Deep Learning, Deep Generative Models;
- AI for Healthcare, Drug Discovery;
- Social Networks, Network Science, Complex Systems;

EDUCATION

- **WEILL CORNELL MEDICINE, CORNELL UNIVERSITY**, New York City, USA, February 2019 - Present
Postdoctoral Associate in Population Health Sciences
Mentor: Prof. Fei Wang
- **TSINGHUA UNIVERSITY**, Beijing, China, August 2013 – January 2019
Ph.D. in Computer Science with honors (Excellent Ph.D. Award in Tsinghua University, and Excellent Ph.D. Dissertation Award in the Computer Science Department)
Advisors: Prof. Wenwu Zhu, Prof. Peng Cui
- **SUN YAT-SEN UNIVERSITY**, Guangzhou, China, September 2009 – July 2013
B.Sc. in Computer Science (GPA 4.1/5, Rank 1st/100)

RESEARCH EXPERIENCE

- **BOEHRINGER INGELHEIM PHARMACEUTICALS, INC.**, Ridgefield, CT, USA.
Biostatistics & Data Science Americas
March 2020 - Present
- **WEILL CORNELL MEDICINE, CORNELL UNIVERSITY**, New York City, NY, USA.
Postdoctoral Associate in Population Health Sciences
Mentor: Prof. Fei Wang
February 2019 - Present
- **NORTHEASTERN UNIVERSITY**, Boston, MA, USA.
Visiting Scholar in Center for Complex Network Research
Mentor: Prof. Albert-László Barabási

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July 2017- May 2018

- Working with visiting Prof. **Christos Faloutsos** from **CARNEGIE MELLON UNIVERSITY**
Summer in 2015, 2016
- Working with visiting Prof. **Chaoming Song** from **MIAMI UNIVERSITY**
Summer in 2014, 2015
- **SUN YAT-SEN UNIVERSITY**, Guangzhou, China
Mentor: Prof. **Jiwu Huang**
March 2011 – May 2012

PUBLICATIONS

REFEREED CONFERENCE PROCEEDINGS

- **[C15] MoFlow: An Invertible Flow Model for Generating Molecular Graphs**, ACM Conference on Knowledge Discovery and Data Mining (**KDD**), 2020. (Accept Rate 216/1279 = 16.89%, Full paper)
Chengxi Zang and Fei Wang.
- **[C14] Neural Dynamics on Complex Networks**, ACM Conference on Knowledge Discovery and Data Mining (**KDD**), 2020. (Accept Rate 216/1279 = 16.89%, Full paper)
Chengxi Zang and Fei Wang.
- **[C13] Recent Advances on Graph Analytics and Its Applications in Healthcare**, **KDD '20**: Proceedings of the 26th ACM SIGKDD International Conference on Knowledge Discovery & Data Mining, August 2020 Pages 3545–3546, Tutorial paper
Fei Wang, Peng Cui, Jian Pei, Yangqiu Song, **Chengxi Zang**
- **[C12] Visualizing Deep Graph Generative Models for Drug Discovery**, **KDD'20** Workshop on Applied Data Science for Healthcare
Karan Yang, **Chengxi Zang** and Fei Wang.
- **[C11] Neural Dynamics on Complex Networks**. The First International Workshop on Deep Learning on Graphs: Methodologies and Applications (**DLGMA'20**) in AAAI 2020. (**Best Paper Award**)
Chengxi Zang and Fei Wang.
- **[C10] Dynamical Origins of Distribution Functions**, ACM Conference on Knowledge Discovery and Data Mining (**KDD**), 2019. (Accept Rate (110 oral + 60 poster)/1200 = 14.2%, Oral, Full paper)
Chengxi Zang, Peng Cui, Wenwu Zhu, and Fei Wang.
- **[C9] Uncovering Pattern Formation of Information Flow**. ACM Conference on Knowledge Discovery and Data Mining (**KDD**), 2019. (Accept Rate (110 oral + 60 poster)/1200 = 14.2%, Poster, Full paper)
Chengxi Zang, Peng Cui, Chaoming Song, Wenwu Zhu, and Fei Wang.
- **[C8] Fates of Microscopic Social Ecosystems: Keep Alive or Dead?** ACM Conference on Knowledge Discovery and Data Mining (**KDD**), 2019. (Accept Rate (110 oral + 60 poster)/1200 = 14.2%, Oral, Full paper)
Haoyang Li, Peng Cui, **Chengxi Zang**✉, Tianyang Zhang, Wenwu Zhu, and Yishi Lin.

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- **[C7] Uncovering the Co-driven Mechanism of Social and Content Links in User Churn Phenomena**, ACM Conference on Knowledge Discovery and Data Mining (**KDD**), 2019. (Acceptance Rate $(45 \text{ oral} + 100 \text{ poster})/700 = 20.7\%$, Poster, Applied Data Science Track, Full Paper)
Yunfei Lu, Lingyun Yu, Peng Cui, **Chengxi Zang**, Renzhe Xu, Yihao Liu, Lei Li, and Wenwu Zhu.
- **[C6] Causation-Driven Visualizations for Insurance Recommendation**, IEEE International Conference on Multimedia & Expo (ICME), 2019, the Cross-media Analysis for Semantic Knowledge Reasoning and Transfer Workshop.
Zhixiu Liu, **Chengxi Zang**, Kun Kunag, Hao Zou, Hu Zheng, and Peng Cui
- **[C5] Collective Human Behavior in Cascading System: Discovery, Modeling and Applications**. 2018 IEEE International Conference on Data Mining (ICDM), 2018. (Acceptance Rate $84/948 = 8.86\%$, Full Paper, **Best Paper Candidate**)
Yunfei Lu, Linyun Yu, Tianyang Zhang, **Chengxi Zang**, Peng Cui, Chaoming Song, and Wenwu Zhu.
- **[C4] Learning and Interpreting Complex Distributions in Empirical Data**. ACM Conference on Knowledge Discovery and Data Mining (**KDD**), 2018. (Acceptance Rate $181/983 = 18.4\%$, Oral, Full paper)
Chengxi Zang, Peng Cui, Wenwu Zhu.
- **[C3] Long Short Memory Process: Modeling Growth Dynamics of Microscopic Social Connectivity**. ACM Conference on Knowledge Discovery and Data Mining (**KDD**), 2017. (Acceptance Rate $131/748 = 17.5\%$, Oral, Full paper)
Chengxi Zang, Peng Cui, Christos Faloutsos, Wenwu Zhu.
- **[C2] Quantifying Structural Patterns of Information Cascades**. International World Wide Web Conference (**WWW**), 2017. (Acceptance Rate $67/166 = 40.4\%$, Poster)
Chengxi Zang, Peng Cui, Chaoming Song, Christos Faloutsos, Wenwu Zhu.
- **[C1] Beyond Sigmoids: the NetTide Model for Social Network Growth, and its Applications**. ACM Conference on Knowledge Discovery and Data Mining (**KDD**), 2016. (Acceptance Rate $142/784 = 18.1\%$, Full paper)
Chengxi Zang, Peng Cui, Christos Faloutsos.

JOURNALS

- **[J2] Exploring the collective human behavior in cascading systems: a comprehensive framework**. Knowledge and Information Systems (KAIS), 2020. <https://doi.org/10.1007/s10115-020-01506-8>
Yunfei Lu, Linyun Yu, Tianyang Zhang, **Chengxi Zang**, Peng Cui, Chaoming Song & Wenwu Zhu.
- **[J1] On Power Law Growth of Social Networks**. IEEE Transactions on Knowledge and Data Engineering (TKDE), 30, no. 9 (2018): 1727-1740.
Chengxi Zang, Peng Cui, Christos Faloutsos, Wenwu Zhu✉.

PH.D. DISSERTATION

- **Data-driven Dynamical Modeling of Complex Social Systems**. 2019. (**Excellent Ph.D. Dissertation Award in the Computer Science Department of Tsinghua University**)
Chengxi Zang.
Advisors: Wenwu Zhu, and Peng Cui.

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Defense Committee members: Xindong Wu, Jianyong Wang, Jie Tang, Huawei Shen, Dan Li, and Wenwu Zhu

TUTORIALS

- **[T2] KDD 2020: the 26th ACM SIGKDD International Conference on Knowledge Discovery & Data Mining**, "[Recent Advances on Graph Analytics and Its Applications in Healthcare](#)", August 23, 2020, Fei Wang (Cornell University); Peng Cui (Tsinghua University); Jian Pei (Simon Fraser University); Yangqiu Song (Hong Kong University of Science and Technology); **Chengxi Zang** (Cornell University)
- **[T1] AAAI 2020: Thirty-Fourth AAAI Conference on Artificial Intelligence**, "[Differential Deep Learning on Graphs and its Applications](#)" February 7, 2020, **Chengxi Zang** (Cornell University), Fei Wang (Cornell University)

INVITED TALKS

- **[T9] ACM Conference on Knowledge Discovery and Data Mining (KDD'20)**. "Graph Generative Models & Drug Discovery", August 2020.
- **[T8] ACM Conference on Knowledge Discovery and Data Mining (KDD'20)**. "Neural Dynamics on Complex Networks", August 2020.
- **[T7] ACM Conference on Knowledge Discovery and Data Mining (KDD'20)**. "MoFlow: An Invertible Flow Model for Generating Molecular Graphs", August 2020.
- **[T6] Notre Dame, Computer Science Department**. "Modeling the Dynamics of WeChat Social System", April 2018.
- **[T5] Harvard Medical School, Channing Network Science Seminar**. "Modeling the Dynamics of WeChat Social System", March 2018.
- **[T4] ACM Conference on Knowledge Discovery and Data Mining (KDD)**. "Long Short Memory Process: Modeling Growth Dynamics of Microscopic Social Connectivity", August 2017.
- **[T3] Tencent Corp, Shenzhen, Tsinghua-Tencent Joint lab 2017 Annual Meeting**. "Long Short Memory Process: Modeling Growth Dynamics of Microscopic Social Connectivity", 2017.
- **[T2] Tsinghua, 15th Anniversary Doctoral Student Forum of Tsinghua University**. "Beyond Sigmoid: the NetTide Model for Social Network Growth, and its Applications", 2017.
- **[T1] Chinese University of Hong Kong (CUHK), Doctoral Student Forum of Beijing and Hong Kong**. "Beyond Sigmoid: the NetTide Model for Social Network Growth, and its Applications", 2016

HONORS AND AWARDS

- **Boehringer Ingelheim Postdoc Fellowship**. 2020-03
- **Best Paper Award** in the First International Workshop on Deep Learning on Graphs: Methodologies and Applications (DLGMA'20) in AAAI 2020.
- **Excellent Ph.D. Award** in the Tsinghua University (**Top 70/2279= 3%**), 2019-07.
- **Excellent Ph.D. Dissertation Award** in the Computer Science Department of Tsinghua University, (**Top 3**) 2019-07.
- **Best Paper Candidate** in 2018 IEEE International Conference on Data Mining (ICDM'18)
- **Tencent Rhino-Bird Elite Training Program**, 2018.
- **SIGKDD Student Travel Award**, London, 2018.
- **SIGKDD Student Travel Award**, Halifax, Nova Scotia, Canada, 2017.
- **Best oral presentation** in the 15th Anniversary Doctoral Student Forum of Tsinghua University, 2017.
- **Tsinghua Scholarship for Overseas Graduate Studies**, 2016.
- **Glarun Scholarship** in Tsinghua, 2016.

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- **SIGKDD Student Travel Award**, San Francisco, CA, USA, 2016.
- **National scholarship**, 2010.
- **First class scholarship in Sun Yat-Sen University**, 2009-2011.

PROFESSIONAL SERVICES

PC Member

- Thirty-Fourth AAAI Conference on Artificial Intelligence (AAAI)
- IEEE International Conference on Data Mining (ICDM)
- IEEE International Conference on Knowledge Graph (ICKG)
- ACM International Conference on Information and Knowledge Management (CIKM)

Reviewer

- IEEE Transactions on Big Data
- IEEE Transactions on Knowledge and Data Engineering (TKDE)
- ACM Transactions on Knowledge Discovery from Data (TKDD)
- Springer Data Mining and Knowledge Discovery (DMKD)
- Knowledge and Information Systems (KAIS)
- ACM Transactions on the Web
- Frontiers in Big Data

Session Chair

- 2017, Doctoral Student Forum of Tsinghua Universities in Beijing and Taiwan
- 2016, Doctoral Student Forum of Beijing and Hong Kong

TEACHING

- TA in **Tsinghua: Big Data Analysis B**, 2015-2016 Fall for Graduate Students
- TA in **Tsinghua: Big Data Analysis and Processing**, 2015-2016 Spring for Graduate Students
- TA in **Tsinghua: Big Data Analysis and Processing**, 2014-2015 Spring for Graduate Students

INTERSHIPS

- **Tencent Guangzhou Research Institute, QQ Mail Team**, July – October 2012
- **Tencent, WeChat, Pattern Recognition Group**, June 2015

SOFTWARES

- <https://github.com/calvin-zcx>
- Dating system for the Perfect Dating Show in Guizhou Province TV Station
- QQ Mail multimedia uploading module.