

# Chang Su

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- RESEARCH INTEREST** Health Informatics; Health Data Mining; Big Data Analytics
- EDUCATION** **Ph.D. Control Science and Engineering**, Xi'an Jiaotong University, Xi'an, China. Dissertation Title: "Online Social Network Structure Analysis and Information Progression Modeling". Jul 2018  
**B.E. Automation**, Xi'an Jiaotong University, Xi'an, China. Jul 2011
- EXPERIENCE** **Assistant Professor.** Department of Health Service Administration and Policy (HSAP), College of Public Health, Temple University, Philadelphia, PA. Jul 2021 – present  
**Postdoctoral Researcher.** Division of Health Informatics, Department of Population Health Sciences, Weill Cornell Medical College, Cornell University, New York, NY. Jul 2018 – Jun 2021
- PUBLICATIONS** **Journals** (published or accepted)
1. **Chang Su**, Yongkang Zhang, James H Flory, Mark G Weiner, Rainu Kaushal, Edward J Schenck, Fei Wang. Novel clinical subphenotypes in COVID-19: derivation, validation, prediction, temporal patterns, and interaction with social determinants of health. *npj Digital Medicine*, 2021.
  2. **Chang Su**, Zhenxing Xu, Katherine Hoffman, Parag Goyal, Monika M Safford, Jerry Lee, Sergio Alvarez-Mulett, Luis Gomez-Escobar, David R Price, John S Harrington, Lisa K Torres, Fernando J Martinez, Thomas R Campion, Rainu Kaushal, Augustine MK Choi, Fei Wang, Edward J Schenck. Identifying organ dysfunction trajectory-based subphenotypes in critically ill patients with COVID-19. *Scientific Reports*. Accepted to Appear. 2021.
  3. Yunbo Cui, Youtian Du, Xue Wang, Hang Wang, **Chang Su**. Leveraging attention-based visual clue extraction for image classification. *IET Image Processing* 2021
  4. **Chang Su**, Robert Aseltine, Riddhi Doshi, Kun Chen, Steven C. Rogers, Fei Wang. Machine Learning for Suicide Risk Prediction in Children and Adolescents with Electronic Health Records. *Translational Psychiatry*. 2020 Nov 26;10(1):1-0.
  5. **Chang Su**, Jie Tong, Fei Wang. Mining genetic and transcriptomic data using machine learning approaches in Parkinson's disease. *npj Parkinson's Disease*. 2020 Sep 9;6(1):1-0.
  6. **Chang Su**, Zhenxing Xu, Jyotishman Pathak, Fei Wang. Deep learning in mental health outcome research: a scoping review. *Translational Psychiatry*. 2020 Apr 22;10(1):1-26.
  7. **Chang Su**, Jie Tong, Yongjun Zhu, Peng Cui, Fei Wang. Network Embedding in Biomedical Data Science. *Briefings in Bioinformatics*. 2020;21(1):182-97.
  8. Sendong Zhao, **Chang Su**, Zhiyong Lu, Fei Wang. Recent advances in biomedical literature mining. *Briefings in Bioinformatics*. 2020 May.
  9. Yongjun Zhu, Chao Che, Bo Jin, Ningrui Zhang, **Chang Su**, Fei Wang. Knowledge-driven drug repurposing using a comprehensive drug knowledge graph. *Health Informatics Journal*. 2020 Jul 17.

10. Youtian Du, Xue Wang, Yunbo Cui, Hang Wang, **Chang Su**. Kernel-Based Mixture Mapping for Image and Text Association. *IEEE Transactions on Multimedia*. 2019 Jul 23;22(2):365-79.
11. **Chang Su**, Xiaohong Guan, Youtian Du, Xin Huang, and Minhua Zhang. Toward Capturing Heterogeneity for Inferring Diffusion Networks: A Mixed Diffusion Pattern Model. *Knowledge-Based Systems*. 2018;147:81-93.
12. **Chang Su**, Xiaohong Guan, Youtian Du, Qian Wang, and Fei Wang. A Fast Multi-level Algorithm for Community Detection in Directed Online Social Networks. *Journal of Information Science*. 2018;44(3):392-407.
13. Xi Zhang, Dandi Chen, Yongjun Zhu, Chao Che, **Chang Su**, Sendong Zhao, Xu Min, Fei Wang. Multi-view ensemble classification for clinically actionable genetic mutations. In *The NIPS'17 Competition: Building Intelligent Systems*. 2018 (pp. 79-99).
14. Jie Tong, Ying Qi, Xiangmiao Wang, Liyin Yu, **Chang Su**, Wenjun Xie, Jianbao Zhang. Cell micropatterning reveals the modulatory effect of cell shape on proliferation through intracellular calcium transients. *Biochimica et Biophysica Acta (BBA)-Molecular Cell Research* 2017 Dec 1;1864(12):2389-401.
15. Youtian Du, **Chang Su**, Zhongmin Cai, and Xiaohong Guan. Web Page and Image Semi-supervised Classification with Heterogeneous Information Fusion. *Journal of Information Science*. 2013; 39(3):289-306.
16. Chenhe Wu, Youtian Du, **Chang Su**. Topic recommendation method with finite driving user nodes in micro-blogging. *Computer Engineering and Applications*. 2013;15:33

#### **Journals** (pre-printed or under review, \*co-first author)

1. **Chang Su**, Yu Hou, Matthew Brendel, Claire Henchcliffe, Fei Wang. Comprehensively modeling heterogeneous symptom progression for Parkinson's disease subtyping. *medRxiv*, 2021.
2. Wanwan Xu\*, **Chang Su**\*, Yan Li, Steven Rogers, Fei Wang, Kun Chen, Robert Aseltine. Improving Suicide Risk Prediction via Targeted Data Fusion: Proof of Concept Using Medical Claims Data. *JAMIA* in revision.
3. **Chang Su**, Yu Hou, Winston Guo, Fayzan Chaudhry, Gregory Ghahramani, Haotan Zhang, Fei Wang. CBKH: The Cornell Biomedical Knowledge Hub. *medRxiv*, 2021 Mar 24.
4. **Chang Su**, Katherine Hoffman, Zhenxing Xu, Elizabeth Sanchez, Ilias Siempos, John S Harrington, Alexandra Racanelli, Maria Plataki, Fei Wang, Edward J. Schenck. Evaluation of albumin kinetics in mechanically ventilated patients with COVID-19 compared to those with Sepsis. *medRxiv*, 2021 Mar 24.
5. Zhenxing Xu, Chengsheng Mao, **Chang Su**, Ilias Siempos, Lisa K Torres, Di Pan, Yuan Luo, Edward J Schenck, Fei Wang. Sepsis Subphenotyping Based on Organ Dysfunction Trajectory. *medRxiv*. 2021 Jan 1.
6. Matthew Brendel, **Chang Su**, Yu Hou, Claire Henchcliffe, Fei Wang. Comprehensive Subtyping of Parkinson's Disease Patients with Similarity Fusion: A Case Study with BioFIND Data. *npj Parkinson's Disease* in revision.
7. Weishen Pan, **Chang Su**, Kun Chen, Claire Henchcliffe, Fei Wang. Learning Phenotypic Associations for Parkinson's Disease with Longitudinal Clinical Records. Pre-printed at *medRxiv*. 2020 Jan 1.

#### **Conference papers**

1. Sendong Zhao, Yong Huang, **Chang Su**, Yuantong Li, Fei Wang. Interactive Attention for Semantic Text Matching. In 20th IEEE International Conference on Data Mining (**ICDM**). Accepted to Appear. 2020.
2. Sendong Zhao, **Chang Su**, Andrea Sboner, Fei Wang. GRAPHENE: A Precise Biomedical Literature Retrieval Engine with Graph Augmented Deep Learning and External Knowledge Empowerment. In 28th ACM International Conference on Information and Knowledge Management (**CIKM**). 2019 Nov 3 (pp. 149-158).
3. Xue Wang, Youtian Du, Xuelian Li, Fuyuan Cao, **Chang Su**. Embedded Representation of Relation Words with Visual Supervision. In 3rd IEEE International Conference on Robotic Computing (**IRC**). 2019 Feb 25 (pp. 409-412).
4. **Chang Su**, Youtian Du, Xiaohong Guan, Chenhe Wu. Maximizing topic propagation driven by multiple user nodes in micro-blogging. In 38th Annual IEEE Conference on Local Computer Networks (**LCN**). 2013 Oct 21 (pp. 751-754).

- PRESENTATIONS AND POSTER SESSIONS
- Poster presentation at the 13th ACM International WSDM Conference, Workshop Healthcare Day, Houston, Texas, USA. 2020
  - Poster presentation at the 38th IEEE Conference on Local Computer Networks, Sydney, AUS. 2013
  - 39th CCF ADL Online Social Media workshop, Beijing, China. 2013

- REFEREE
- Briefings in Bioinformatics
  - IEEE Transactions on Neural Networks and Learning Systems
  - Knowledge and Information Systems
  - Pattern Recognition
  - Data Mining and Knowledge Discovery
  - PeerJ Computer Science
  - IEEE/ACM Transactions on Computational Biology and Bioinformatics
  - Journal of Medical Internet Research
  - Archives of Suicide Research
  - Annual Symposium on Medical Informatics (AMIA) 2020
  - ACM International Conference on Web Search and Data Mining (WSDM) 2020
  - ACM International Conference on Information and Knowledge Management (CIKM) 2019

- HONORS AND AWARDS
- Winner of NeurIPS Competition on Classifying Clinically Actionable Genetic Mutations. Dec 2017
  - The Annual First-class Scholarship of Xi'an Jiaotong University. 2015 & 2016
  - The "Guang Hua" Scholarship of Xi'an Jiaotong University. 2014
  - The Outstanding Graduate Student of Xi'an Jiaotong University. 2012 & 2014

- TEACHING
- TA of *AI in Medicine*. Master Students. Weill Cornell Medicine. Spring 2021
  - TA of *AI in Medicine*. Master Students. Weill Cornell Medicine. Spring 2020
  - TA of *Health Data Mining*. Master Students. Weill Cornell Medicine. Summer 2019