

**Jun Tao**

**PhD**

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## Professional Experience

Associate Professor, Sep 2018-Present  
Sun Yat-sen University, Guangzhou, Guangdong, China

Postdoctoral Researcher, Oct 2015-Sep 2018  
University of Notre Dame, Notre Dame, IN

Research Assistant, Sep 2011-Oct 2015  
Michigan Technological University, Houghton, MI

Intern, May-Aug 2012, May-Aug 2013  
Siemens Corporate Technology, Princeton, NJ

## Education

PhD Student, Computer Science, Sep 2010-Dec 2015  
Michigan Technological University, Houghton, MI

Master of Science, Computer Science, Sep 2008-May 2010  
Michigan Technological University, Houghton, MI

Bachelor of Engineering, Software Engineering, Sep 2004-Jul 2008  
Sun Yat-sen University, Guangzhou, Guangdong, China

## Research Interest

Flow visualization  
User interface and interaction  
Visual analytics  
Software visualization

## Honors and Awards

Doctoral Finishing Fellowship, Michigan Technological University, 2015  
Outstanding Research Award, Michigan Technological University, 2015  
First-prize Scholarship, Sun Yat-sen University, 2006-2007  
Second-prize Scholarship, Sun Yat-sen University, 2005-2006

## Publications

### Refereed Journal Papers

1. Jun Zhang, **Jun Tao**, Jian-Xun Wang, and Chaoli Wang. SurfRiver: Flattening Stream Surfaces for Comparative Visualization. *IEEE Transactions on Visualization and Computer Graphics (PacificVis'21)* (2021). Accepted.
2. Jun Han, **Jun Tao**, and Chaoli Wang. FlowNet: A Deep Learning Framework for Clustering and Selection of Streamlines and Stream Surfaces. *IEEE Transactions on Visualization and Computer Graphics* **26**(4) (2020), 1732–1744.

3. Jia Yan, Lei Shi, **Jun Tao**, Xiaolong Yu, Zhou Zhuang, Congcong Huang, Rulei Yu, Purui Su, Chaoli Wang, and Yang Chen. Visual Analysis of Collective Anomalies Using Faceted High-Order Correlation Graphs. *IEEE Transactions on Visualization and Computer Graphics* **26**(7) (2020), 2517–2534.
4. Jun Han, **Jun Tao**, Hao Zheng, Hanqi Guo, Danny Z. Chen, and Chaoli Wang. Flow Field Reduction via Reconstructing Vector Data from 3D Streamlines Using Deep Learning. *IEEE Computer Graphics and Applications (Special Issue on Visual Computing with Deep Learning)* **39**(2) (2019).
5. **Jun Tao**, Martin Imre, Chaoli Wang, Nitesh V. Chawla, Hanqi Guo, Gökhan Sever, and Seung Hyun Kim. Exploring Time-Varying Multivariate Volume Data Using Matrix of Isosurface Similarity Maps. *IEEE Transactions on Visualization and Computer Graphics* **25**(1) (Jan. 2019).
6. **Jun Tao**, Chaoli Wang, Nitesh V. Chawla, Lei Shi, and Seung Hyun Kim. Semantic Flow Graph: A Framework for Discovering Object Relationships in Flow Fields. *IEEE Transactions on Visualization and Computer Graphics* **24**(12) (Dec. 2018), 3200–3213.
7. **Jun Tao** and Chaoli Wang. Semi-Automatic Generation of Stream Surfaces via Sketching. *IEEE Transactions on Visualization and Computer Graphics* **24**(9) (Sept. 2018), 2622–2635.
8. Martin Imre, **Jun Tao**, and Chaoli Wang. Identifying Nearly Equally Spaced Isosurfaces for Volumetric Data Sets. *Computers & Graphics* **76** (May 2018), 82–97.
9. Chao Huang, Dong Wang, and **Jun Tao**. An Unsupervised Approach to Inferring the Localness of People Using Incomplete Geotemporal Online Check-In Data. *ACM Transactions on Intelligent Systems and Technology* **8**(6) (2017).
10. Chao Huang, Dong Wang, **Jun Tao**, and Brain Mann. On Physical-Social-Aware Localness Inference By Exploring Big Data from Location-Based Services. *IEEE Transactions on Big Data* (2017).
11. Chaoli Wang and **Jun Tao**. Graphs in Scientific Visualization: A Survey. *Computer Graphics Forum* **36**(1) (Jan. 2017), 263–287.
12. Ian Turk, Matthew Sinda, Xin’an Zhou, **Jun Tao**, Chaoli Wang, and Qi Liao. Exploration of Linked Anomalies in Sensor Data for Suspicious Behavior Detection. *International Journal of Software and Informatics* **10**(3) (2016).
13. **Jun Tao**, Xiaoke Huang, Feng Qiu, Chaoli Wang, Jingfeng Jiang, Ching-Kuang Shene, Ye Zhao, and Daphne Yu. VesselMap: A Web Interface to Explore Multivariate Vascular Data. *Computers & Graphics* **59** (Oct. 2016), 79–92.
14. **Jun Tao**, Chaoli Wang, Ching-Kuang Shene, and Raymond A. Shaw. A Vocabulary Approach to Partial Streamline Matching and Exploratory Flow Visualization. *IEEE Transactions on Visualization and Computer Graphics* **22**(5) (May 2016), 1503–1516.
15. Chaoli Wang, John P. Reese, Huan Zhang, **Jun Tao**, Yi Gu, Jun Ma, and Robert J. Nemeiroff. Similarity-based Visualization of Large Image Collections. *Information Visualization* **14**(3) (July 2015), 183–203.
16. **Jun Tao**, Chaoli Wang, Ching-Kuang Shene, and Seung Hyun Kim. A Deformation Framework for Focus+Context Flow Visualization. *IEEE Transactions on Visualization and Computer Graphics* **20**(1) (Jan. 2014), 42–55.
17. Huan Zhang, **Jun Tao**, Fang Ruan, and Chaoli Wang. A Study of Animated Transition in Similarity-Based Tiled Image Layout. *Tsinghua Science and Technology (Special Issue on Visualization and Computer Graphics)* **18**(2) (Apr. 2013), 157–170.
18. **Jun Tao**, Jun Ma, Chaoli Wang, and Ching-Kuang Shene. A Unified Approach to Streamline Selection and Viewpoint Selection for 3D Flow Visualization. *IEEE Transactions on Visualization and Computer Graphics* **19**(3) (Mar. 2013), 393–406.

19. **Jun Tao**, Jun Ma, Melissa Keranen, Jean Mayo, and Ching-Kuang Shene. DESvisual: a Visualization Tool for the DES Cipher. *Journal of Computing Sciences in Colleges* 27(1) (Oct. 2011), 81–89.

### Refereed Conference Papers

1. Maggie C. Goulden, Eric Gronda, Yurou Yang, Zihang Zhang, **Jun Tao**, Chaoli Wang, Xiaojing Duan, G. Alex Ambrose, Kevin Abbott, and Patrick Miller. CCVis: Visual Analytics of Student Online Learning Behaviors Using Course Clickstream Data. In: *Proceedings of IS&T Conference on Visualization and Data Analysis*. Burlingame, CA, Jan. 2019.
2. **Jun Tao**, Lei Shi, Zhou Zhuang, Congcong Huang, Rulei Yu, Purui Su, Chaoli Wang, and Yang Chen. Visual Analysis of Collective Anomalies Through High-Order Correlation Graph. In: *Proceedings of IEEE Pacific Visualization Symposium*. Kobe, Japan, Apr. 2018.
3. Xian Wu, Yuxiao dong, **Jun Tao**, Chao Huang, and Nitesh V. Chawla. Reliable Fake Review Detection via Modeling Temporal and Behavioral Patterns. In: *Proceedings of IEEE International Conference on Big Data*. Boston, MA, Dec. 2017.
4. Martin Imre, **Jun Tao**, and Chaoli Wang. Efficient GPU-Accelerated Computation of Isosurface Similarity Maps. In: *Proceedings of IEEE Pacific Visualization Symposium (Visualization Notes)*. Seoul, Korea, Apr. 2017.
5. **Jun Tao**, Jian Xu, Chaoli Wang, and Nitesh V. Chawla. HoNVis: Visualizing and Exploring Higher-Order Networks. In: *Proceedings of IEEE Pacific Visualization Symposium*. Seoul, Korea, Apr. 2017, pp.1–10.
6. Jian Xu, **Jun Tao**, Nitesh V. Chawla, and Chaoli Wang. Demo Abstract: Visual Analytics of Higher-Order Dependencies in Sensor Data. In: *ACM/IEEE International Conference on Internet-of-Things Design and Implementation*. Pittsburgh, PA, Apr. 2017.
7. **Jun Tao** and Chaoli Wang. Peeling the Flow: A Sketch-Based Interface to Generate Stream Surfaces. In: *Proceedings of ACM SIGGRAPH Asia Symposium on Visualization*. Dec. 2016.
8. Jun Ma, **Jun Tao**, Melissa Keranen, Jean Mayo, Ching-Kuang Shene, and Chaoli Wang. AESvisual: A Visualization Tool for the AES Cipher. In: *Proceedings of ACM Conference on Innovation and Technology in Computer Science Education*. Arequipa, Peru, July 2016, pp.230–235.
9. Man Wang, **Jun Tao**, Jun Ma, Yang Shen, and Chaoli Wang. FlowVisual: A Visualization App for Teaching and Understanding 3D Flow Field Concepts. In: *Proceedings of IS & T Conference on Visualization and Data Analysis*. San Francisco, CA, Feb. 2016.
10. Can Li, Jun Ma, **Jun Tao**, Jean Mayo, Ching-Kuang Shene, Melissa Keranen, and Chaoli Wang. VIGvisual: A Visualization Tool for the Vigenère Cipher. In: *Proceedings of ACM Conference on Innovation and Technology in Computer Science Education*. Vilnius, Lithuania, July 2015, pp.129–134.
11. Jun Ma, **Jun Tao**, Melissa Keranen, Jean Mayo, Ching-Kuang Shene, and Chaoli Wang. SHAVisual: A Secure Hash Algorithm Visualization Tool. In: *Proceedings of American Society for Engineering Education Annual Conference*. Seattle, WA, June 2015.
12. **Jun Tao**, Jun Ma, Melissa Keranen, Jean Mayo, Ching-Kuang Shene, and Chaoli Wang. RSAvisual: A Visualization Tool for the RSA Cipher. In: *Proceedings of ACM Technical Symposium on Computer Science Education*. Atlanta, GA, Mar. 2014, pp.635–640.
13. **Jun Tao**, Chaoli Wang, and Ching-Kuang Shene. FlowString: Partial Streamline Matching Using Shape Invariant Similarity Measure for Exploratory Flow Visualization. In: *Proceedings of IEEE Pacific Visualization Symposium*. Yokohama, Japan, Mar. 2014, pp.9–16.
14. Man Wang, **Jun Tao**, Chaoli Wang, Ching-Kuang Shene, and Seung Hyun Kim. FlowVisual: Design and Evaluation of a Visualization Tool for Teaching 2D Flow Field Concepts. In: *Proceedings of American Society for Engineering Education Annual Conference*. Atlanta, GA, June 2013.

15. Chaoli Wang, John P. Reese, Huan Zhang, **Jun Tao**, and Robert J. Nemiroff. iMap: A Stable Layout for Navigating Large Image Collections with Embedded Search. In: *Proceedings of IS&T/SPIE Conference on Visualization and Data Analysis*. Burlingame, CA, Feb. 2013.
16. **Jun Tao**, Jun Ma, Melissa Keranen, Jean Mayo, and Ching-Kuang Shene. ECvisual: a Visualization Tool for Elliptic Curve Based Ciphers. In: *Proceedings of ACM Technical Symposium on Computer Science Education*. Raleigh, NC, Mar. 2012, pp.571–576.

### Refereed Posters

1. **Jun Tao**, Chaoli Wang, Nitesh V. Chawla, and Lei Shi. Semantic Flow Graph: A Framework to Explore 3D Flow Fields. In: *IEEE Visualization Poster*. Baltimore, MD, Oct. 2016.
2. Jun Ma, **Jun Tao**, Melissa Keranen, Jean Mayo, Ching-Kuang Shene, and Chaoli Wang. SHAvi-sual: A Secure Hash Algorithm Visualization Tool. In: *ACM Conference on Innovation and Technology in Computer Science Education Poster*. Uppsala, Sweden, June 2014.
3. Jun Ma, **Jun Tao**, Chaoli Wang, and Ching-Kuang Shene. Streamline Selection and Viewpoint Selection via Information Channel. In: *IEEE VisWeek Poster*. Providence, RI, Oct. 2011.

## Service

### Conference Tutorial Organizer

Recent Advancements of Feature-Based Flow Visualization and Analysis, IEEE VIS, 2016

### Program Committee Member

ACM CIKM International Workshop on Data Mining Meets Visual Analytics at Big Data Era, 2016

ChinaVis, 2017, 2018, 2019, 2020, 2021

IEEE Pacific Visualization Symposium (PacificVis), 2019, 2020, 2021

IEEE Visualization Conference (VIS), 2021

International Conference on Applications and Systems of Visual Paradigms, 2016, 2017, 2018

### Journal Reviewer

IEEE Journal of Biomedical and Health Informatics (IEEE JBHI), 2014

IEEE Transactions on Visualization and Computer Graphics, 2017, 2020

International Journal of Computer Assisted Radiology and Surgery (IJCARS), 2013, 2014

Journal of Visual Languages and Computing (JVLC), 2016 Journal of Visualization (JOV), 2017, 2018, 2019, 2020, 2021

### Conference Reviewer

American Society for Engineering Education (ASEE), 2013

Eurographics/IEEE-VGTC Symposium on Visualization (EuroVis), 2015, 2017, 2018

IEEE Information Visualization Conference (InfoVis), 2015

IEEE Pacific Visualization Symposium (PacificVis), 2015

IEEE (Scientific) Visualization Conference (Vis/SciVis), 2013, 2016, 2017, 2018, 2019, 2020, 2021

IEEE Conference on Visual Analytic Science and Technology (VAST), 2019, 2020 International Joint Conference on Computer Vision, Imaging and Computer Graphics Theory and Applications (VISIGRAPP), 2012, 2013

International Journal of Computer Assisted Radiology and Surgery (IJCARS), 2013

International Symposium on Graph Drawing & Network Visualization (GD), 2016