

Jiao Sun

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Education Background

09/2016~Present	Institute for Interdisciplinary Information Sciences, Tsinghua University	Beijing, China
	M.Sc. in Computer Science and Technology	
08/2012~07/2016	School of Computer Science and Technology, Shandong University	Jinan, China
	B.Eng. in Computer Science and Technology	GPA: 90.1/100 Ranking: 2/156

Research Experiences

03/2018~Present	CollisionDistance: Visual Fraud Detection over Categorically Featured Online Users	THU
M.Sc. Project	Funded by NSFC (No. 61532001) & Tsinghua Initiative Research Program	Advisor: Prof. Wei Xu, Prof. Ling Huang
<p>➤ Designed a scalable, multi-layer collision map to interpret the output of algorithmic fraud detection methods. & Proposed a novel metric to consolidate the sub-space grouping characteristics of fraud users into the same high dimensional data space. & Developed a comprehensive visualization system prototype composed of the collision map, a scented feature selection and weighting panel, and detail views for both fraud groups and their user profiles. & In preparation.</p>		
06/2018~Present	FraudTrap: Catching Smart Fraudsters via Object Similarity Graph Analysis	THU
Core Member	Funded by NSFC (No. 61532001) & Tsinghua Initiative Research Program	Advisor: Prof. Wei Xu, Prof. Ling Huang
<p>➤ Designed a fraud detection system called FraudTrap & Built Object Similarity Graph by a novel similarity metric to catch loosely synchronized behavior of fraud groups. & Worked for both the unsupervised and semi-supervised modes. & Provided an optimized algorithm that significantly reduces the computational cost of building OSG. & Designed a scalable and provably converging algorithm to detect multiple dense subgraphs simultaneously in OSG implemented in Apache Spark. & On submission.</p>		
09/2017~2018/03	FraudVis: Understanding Unsupervised Fraud Detection Algorithms	THU
First Author	Funded by NSFC (No. 61532001) & Tsinghua Initiative Research Program	Advisor: Prof. Wei Xu, Prof. Ling Huang
<p>➤ Comprehensively visualized the fraud detection results. & Visual interpretation of algorithm results through customized interactions. & Evaluation through real-world data sets, algorithms, and cases. & Published a paper in <i>The 11th IEEE Pacific Visualization Symposium(PacificVis 2018)</i></p> <p>➤ Won Best Poster Prize in <i>The 8th Cross-Strait Tsinghua Postgraduate Academic Forum</i> (acceptance rate <13%)</p>		
09/2016~08/2017	DataLab: Introducing Software Engineering Thinking into Data Science Education at Scale	THU
Member	Funded by NSFC (No. 61379088) & Google Faculty Award & China 1000 Talents Plan Grants.	Advisor: Prof. Wei Xu
<p>➤ Designed and implemented DataLab, a web-based tool for data science education that integrates code, data and execution management into one system. & Provided a hands-on online lab environment to train students to have basic software engineering thinking and habits while maintaining a focus on the core data science contents. & Published a paper in <i>39th International Conference on Software Engineering Education and Training Track(ICSE SEET 2017)</i>.</p>		
09/2015~04/2016	A case study for user rating prediction on automobile recommendation system using MapReduce	SDU
B.Eng. Project	Funded by National Natural Science Foundation of China (61402263, 61572295).	Advisor: Prof. Li Pan
<p>➤ Optimized the computational cost of collaborative filtering methods of matrix factorization using MapReduce. & Applied the optimized algorithm to the recommendation of automobiles. & Published a paper in <i>2018 International Workshop on HPC Supported Data Analytics for Edge Computing</i>.</p> <p>➤ Rewarded as Excellent Graduation Thesis of Shandong University (top 3%).</p>		

Publications

- **Jiao Sun**, Yin Li, Lei Shi, Ling Huang, and Wei Xu, "CollisionDistance: Visual Fraud Detection over Categorical Featured Online Users" (In preparation)
- Yikun Ban, **Jiao Sun**, Xin Liu, Ling Huang, Yitao Duan, and Wei Xu, "FraudTrap: Catching smart Fraudsters via Object Similarity Graph Analysis"(On submission)
- **Jiao Sun**, Qixin Zhu, Zhifei Liu, Xin Liu, Yueming Wang, Jihae Lee, Lei Shi, Ling Huang and Wei Xu, "FraudVis: Understanding Unsupervised Fraud Detection Algorithms", *the 11th IEEE Pacific Visualization Symposium(PacificVis 2018)*
- Charley Chen, Guosai Wang, **Jiao Sun** and Wei Xu, "Detecting Data Center Cooling Problems Using a Data-driven Approach", *the 9th Asia-Pacific Workshop on Systems(APSys 2018)*
- Yang Zhang, Tingjian Zhang, Yongzheng Jia, **Jiao Sun** and Wei Xu, "DataLab: Introducing Software Engineering Thinking into Data Science Education at Scale", *the 2017 IEEE/ACM 39th International Conference on Software Engineering: Software Engineering and Education Track (ICSE-SEET) in Buenos Aires, Argentina*
- **Jiao Sun**, Li Pan, Shijun Liu, "A case study for user rating prediction on automobile recommendation system using MapReduce", bachelor thesis & *2018 International Workshop on HPC Supported Data Analytics for Edge Computing*
- Yi Wei, Shijun Liu, **Jiao Sun**, Lizhen Cui, Li Pan and Lei Wu, "Big datasets for research: A survey on flagship conferences", Big Data (BigData Congress), 2016 IEEE International Congress on, 394-401

Extracurricular Activities

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|---|-------------------------------|---|
| 04/2017~Present | Vice Chairman | Graduate Association of Interdisciplinary Information Sciences, THU |
| ➤ Organized several activities, such as 'Meet with alumnus', <i>Graduate Student Academic Sharing Forum</i> and so on | | |
| 03/2013~03/2015 | Founder & Minister | Asian Youth Center Association, THU |
| ➤ Fostered the communication between Chinese students and International Students. & Improved the global leadership of memberships | | |
| 09/2012~03/2014 | Student Ambassador | Tsinghua Schwartzman College & "Experiencing China" Program, THU |
| ➤ Helped international students learn more about Tsinghua and China & Helped spread the global impression of Tsinghua | | |

Honors and Awards

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| ➤ Baidu-Tsinghua Future Star Scholarship of THU (top 3%) | 10/2017 |
| ➤ Baidu-Tsinghua Social Work Scholarship of THU (top 3%) | 10/2017 |
| ➤ Merit Student of Shandong Province (top 1%) | 05/2016 |
| ➤ Outstanding Graduate Student of Shandong University (top 3%) | 05/2016 |
| ➤ First-Class Scholarship of Shandong University (consecutive three times, top 2%) | 2013~2016 |
| ➤ Merit Student of Shandong University(consecutive three times, top 2%) | 2013~2016 |
| ➤ National Motivational Scholarship (consecutive three times, top 2%) | 2013~2016 |
| ➤ Excellent Student Cadre of Shandong University(top 3%) | 2016 |
| ➤ First Prize, Mathematical Contest of Modeling in Shandong University(top 1%) | 08/2015 |
| ➤ Second Prize, Mathematical Contest in Modeling | 05/2015 |
| ➤ Bronze Award, Mobile Innovation Programming Contest | 05/2014 |
| ➤ Bronze Award, Qilu Software Programming Contest | 09/2013 |
| ➤ Best debater of Shandong University | 03/2013 |

Skills

- **Proficient** in Python, Matlab, Java, Django, Linux.
- **Familiar** with Javascript, R, html, css, Spark, Hadoop.

English Proficiency

- **GRE** (Sep. 1st, 2018): Total: 328 (**V: 162**, **Q: 166**) **AW: 3.5**
- **TOEFL**(Sep. 16th, 2018): Total: 104(**R: 30**, **L: 28**, **S: 23**, **W: 23**)