Qiaomu Shen │ Curriculum Vitae

Rm 548B, South Tower, CoE Building, SUSTech, Shenzhen, P.R. China   shenqm@sustech.edu.cn │ +86 13608175215

RESEARCH INTEREST

Data Visualization, System Observerbility, Human-Computer Interaction, Spatial-Temporal Data Analysis, Explainable AI

EXPERIENCE

Research Assistant Professor   Aug 2021 – Present
Southern University of Science and Technology (SUSTECH)   *Shenzhen, Guangdong, P.R. China*

Senior Engineer   Apr 2020 – Aug 2021
Huawei-Noah's Ark   *Shenzhen, Guangdong, P.R. China*

EDUCATION

PhD, Electronic and Computer Engineering   2016 – 2020
Hong Kong University of Science and Technology (HKUST)   *Hong Kong, P.R. China*
Advisor: Huamin Qu

MEng, Computer Science and Technology   2012 – 2015
Sichuan University (SCU)   *Chengdu, Sichuan, P.R. China*
Advisor: Min Zhu

BEng, Computer Science and Technology   2008 – 2012
Sichuan University (SCU)   *Chengdu, Sichuan, P.R. China*

RESEARCH INTERNSHIPS AND VISITS

Visting Researcher   Jan 2019 – Jun 2019
Delft University of Technology, with Prof. Anna Vilanova   *Delft, The Netherlands*

Research Assistant   Jun 2015 – Feb 2016
Hong Kong University of Science and Technology   *Hong Kong, P.R. China*

Internship   Sept 2015 – Dec 2015
Huawei-Noah's Ark   *Hong Kong, P.R. China*

AWARD AND HONORS

Shenzhen Overseas High-Caliber Personnel Peacock Plan Level C   2020 – Present
Shenzhen Government

Overseas Research Award   2019 – 2020
Hong Kong University of Science and Technology

100 Outstanding Student of Sichuan University   2012
Sichuan University

ZhiSheng Scholarship   2012
Sichuan University

PUBLICATIONS

Journal Papers (J), Conference Papers (C), Books (B), # for corresponding author

2024 J1 **Qiaomu Shen**, Chaozu Zhang, Xiao Yan, Chuan Yang, Dan Zeng, Wei Zeng, Bo Tang "CheetahTraj: Efficient Visualization for Large Trajectory Dataset with Quality Guarantee" IEEE Transactions on Knowledge and Data Engineering (TKDE), 2024. (To appear)

2023 J2 **Qiaomu Shen**, Zhengxin You, Xiao Yan, Chaozu Zhang, Ke Xu, Jianbin Qin, Dan Zeng, Bo Tang. "QEVIS: Multi-grained Visualizing of Distributed Query Execution." IEEE Transactions on Visualization and Computer Graphics (TVCG), 2023.(To appear)

J3 Xiaolin Wen, Yong Wang, Meixuan Wu, Fengjie Wang, Xuanwu Yue, **Qiaomu Shen**, Yuxin Ma, Min Zhu. "DiffSeer: Difference-Based Dynamic Weighted Graph Visualization." IEEE Computer Graphics and Applications, 2023.

C1 Dan Zeng, Shanchuan Hong, Shuiwang Li, **Qiaomu Shen**#, Bo Tang. "Data-Scarce Animal Face Alignment via Bi-Directional Cross-Species Knowledge Transfer." In Proceedings of the 31th ACM international conference on multimedia (MM), 2023. (To appear)

C2 Chaozu Zhang, **Qiaomu Shen**, Bo Tang. "DHive: Query Execution Performance Analysis via Dataflow in Apache Hive." In Proceedings of the 49th International Conference on Very Large Data Bases (PVLDB, Demo), 2023.

C3 Zelin Li, Dan Zeng, Xiao Yan, **Qiaomu Shen**, Bo Tang. "Analyzing and Combating Attribute Bias for Face Restoration." In Proceedings of 32nd International Joint Conference on Artificial Intelligence (IJCAI), 2023.

2022 C4 Haotian Liu, Bo Tang, Jiashu Zhang, Yangshen Deng, Xiao Yan, Xinying Zheng, **Qiaomu Shen**, Dan Zeng, Zunyao Mao, Chaozu Zhang, Zhengxin You, Zhihao Wang, Runzhe Jiang, Fang Wang, Man Lung Yiu, Huan Li, Mingji Han, Qian Li, Zhenghai Luo. "GHive: Accelerating Analytical Query Processing in Apache Hive via CPU-GPU Heterogeneous Computing." In Proceedings of the 13th Symposium on Cloud Computing (SOCC), 2022.

C5 Haotian Liu, Bo Tang, Jiashu Zhang, Yangshen Deng, Xinying Zheng, **Qiaomu Shen**, Xiao Yan, Dan Zeng, Zunyao Mao, Chaozu Zhang, Zhengxin You, Zhihao Wang, Runzhe Jiang, Fang Wang, Man Lung Yiu, Huan Li, Mingji Han, Qian Li, Zhenghai Luo. "GHive: A Demonstration of GPU-Accelerated Query Processing in Apache Hive." In Proceedings of the ACM Conference on Management of Data (SIGMOD, Demo), 2022.

C6 Bo Tang, Zeng Jian, Qiandong Tang, Chuan Yang, **Qiaomu Shen**, Leong Hou U, Xiao Yan, Dan Zeng. "CheetahKG: A Demonstration for Core-based Top-k Frequent Pattern Discovery on Knowledge Graphs." In 2022 IEEE 38th International Conference on Data Engineering(ICDE, Demo), 2022.

2020 C7 **Qiaomu Shen**, Yanhong Wu, Yuzhe Jiang, Wei Zeng, KH Alexis, Anna Vianova, Huamin Qu. "Visual Interpretation of Recurrent Neural Network on Multi-dimensional Time-series Forecast." In 2020 IEEE Pacific Visualization Symposium (PacificVis), 2020.

C8 Wentao Ning, Qiandong Tang, Yi Zhao, Chuan Yang, Xiaofeng Wang, Teng Wang, Haotian Liu, Chaozu Zhang, Zhiyuan Zhou, **Qiaomu Shen**, Bo Tang. "CheetahVIS: A Visual Analytical System for Large Urban Bus Data." In Proceedings of the 46th International Conference on Very Large Database(PVLDB, Demo), 2020.

J4 Wenwei Che, H. Christopher Frey, Jimmy C.H. Fung, Zhi Ning, Huamin Qu, Hong Kam Lo , Lei Chen, Tze-Wai Wong,... Meilan Wang, **Qiaomu Shen**, Wei Huang, ... Alexis K.H. Lau. "PRAISE-HK: A personalized real-time air quality informatics system for citizen participation in exposure and health risk management." Sustainable Cities and Society, 2020.

2019 J5 Wei Zeng, **Qiaomu Shen**#, Yuzhe Jiang, Alexandru Telea. "Route-aware edge bundling for visualizing origin-destination trails in urban traffic." Computer Graphics Forum, 2019.

J6 Yu Ye, Wei Zeng, **Qiaomu Shen**, Xiaohu Zhang, Yi Lu. "The visual quality of streets: A human-centred continuous measurement based on machine learning algorithms and street view images." Environment and Planning B: Urban Analytics and City Science, 2019.

C9 Qianwen Wang, Yao Ming, Zhihua Jin, **Qiaomu Shen**, Dongyu Liu, Micah J Smith, Kalyan Veeramachaneni, Huamin Qu. "Atmseer: Increasing transparency and controllability in automated machine learning." Proceedings of the 2019 CHI conference on human factors in computing systems, 2019.

2017 J7 **Qiaomu Shen**, Wei Zeng, Yu Ye, Stefan Müller Arisona, Simon Schubiger, Remo Burkhard, Huamin Qu. "StreetVizor: Visual exploration of human-scale urban forms based on street views." IEEE Transactions on Visualization and Computer Graphics(TVCG), 2017.

J8 Bing Ni, **Qiaomu Shen**, Jiayi Xu, Huamin Qu. "Spatio-temporal flow maps for visualizing movement and contact patterns." Visual Informatics, 2017.

C10 Quan Li, **Qiaomu Shen**, Yao Ming, Peng Xu, Yun Wang, Xiaojuan Ma, Huamin Qu. "A visual analytics approach for understanding egocentric intimacy network evolution and impact propagation in MMORPGs." In 2017 IEEE Pacific Visualization Symposium(PacificVis), 2017.

2016 J9 **Qiaomu Shen**, Tongshuang Wu, Haiyan Yang, Yanhong Wu, Huamin Qu, Weiwei Cui. "Nameclarifier: A visual analytics system for author name disambiguation." IEEE Transactions on Visualization and Computer Graphics(TVCG), 2016.

J10 Yanhong Wu, Nan Cao, Daniel Archambault, **Qiaomu Shen**, Huamin Qu, Weiwei Cui. "Evaluation of graph sampling: A visualization perspective." IEEE Transactions on Visualization and Computer Graphics(TVCG), 2016.

C11 Qinglai He, Min Zhu, Binbin Lu, Hanqing Liu, **Qiaomu Shen**. "MENA: Visual analysis of multivariate egocentric network evolution." In 2016 International conference on virtual reality and visualization (ICVRV), 2016.

2015 J11 Yong Wang, **Qiaomu Shen**, Daniel Archambault, Zhiguang Zhou, Min Zhu, Sixiao Yang, Huamin Qu. "Ambiguityvis: Visualization of ambiguity in graph layouts." IEEE Transactions on Visualization and Computer Graphics(TVCG), 2015.

B1 Min Zhu, Lei Duan, Bo Tang, Qiaomu Shen, et.al., "Handbook of Operating System Course Projects." China Machine Press, ISBN: 978-7-111-48416-5, 2015.

PATENTS

2023 P1 **Qiaomu Shen**, Chaozu Zhang and Bo Tang. "A method, device, equipment, and medium for visualizing the analysis of the Hive query execution process." Accepted by the National Intellectual Property Administration.

2022 P2 Bo Tang, Peiqi Yuan, Qian Li and **Qiaomu Shen**. "A method, device, equipment, and storage medium for visualizing hidden risk data." Accepted by the National Intellectual Property Administration.

INVITED TALKS

2023 Aug **Visual analytics for large scale query processing system.**
Invited Talks, HKUST Guangzhou, Guangzhou, Guangdong, P.R. China

Aug **Towards better understanding of distributed processding system.**
Invited Talks, Sichuan University, Chengdu, Sichuan, P.R. China

2022 Aug **Visual Analysis Techniques for Complex Urban Information.**
Invited Talks, Sichuan University, Chengdu, Sichuan, P.R. China

Jul **Visualization Assisted Techniques for Large-Scale Computing Systems.**
Invited Talks, ChinaVIS, Xinin, Qinhai, P.R. China

2020 Jun **Visual Interpretation of Recurrent Neural Network on Multi-dimensional Time-series Forecast**
Paper Presentation, Online

Jan **Visual Analyatics for Urban Informatics**
Invited Talks, Zhijiang Lab, Hangzhou, Zhejiang, P.R. China

Jan **Visual Analyatics for Urban Informatics**
Invited Talks, AntV Team, Hangzhou, Zhejiang, P.R. China

2017 Oct **StreetVizor: Visual Exploration of Human-Scale Urban Forms Based on Street Views**
Paper Presentation, IEEE VIS Conference, Phoenix, USA

2016 Oct **NameClarifier: A Visual Analytics System for Author Name Disambiguation**
Paper Presentation, IEEE VIS Conference, Baltimore, USA

TEACHING

Introduction to Computer Science (COMP1021)   2016 – 2020
Hong Kong University of Science and Technology, Lab TA   *4 Semester*

ACADEMIC SERVICE

Conference Review

- ACM CHI 2023, 2021
- ACM MM 2023
- IEEE VIS 2023, 2022, 2019
- ChinaVIS 2023, 2022, 2021, 2019, 2018

Journal Review

- IEEE TVCG
- JPDC

Professional Organizations

- Member, IEEE; Member,CCF; Member, CSIG

MENTORING

Ph.D. Student

- Zhengxin You (PolyU Hong Kong), 2022-present, co-supervise with Dr. Bo Tang
- Haipeng Zeng (HKUST), 2018-2020, co-supervise with Prof. Huamin Qu
- Yuzhe Jiang (HKUST), 2018-2020, co-supervise with Prof. Huamin Qu

M.Phil. Students

- Teng Wang, 2021-2022, co-supervise with Dr. Bo Tang
- Qian Li, 2021-2023, co-supervise with Dr. Bo Tang
- Chaozu Zhang, 2021-present, co-supervise with Dr. Bo Tang
- Shangxuan Wu, 2022-present
- Yansha Jia, 2023-present