Shaolun RUAN

Residence: 80 Stamford Rd, Singapore
E-mail: slruan.2021@phdcs.smu.edu.sg ✴ *Telephone number:* +86-86153821
Personal homepage: https://shaolun-ruan.com/

Research Area

To enhance the human ability to read and understand big data, I developed novel graphical representations that enable a more effective and smoother analysis using machines. My work focuses on improving the accessibility of complex and abstract domain concepts such as Quantum Computing, leveraging the methods from **Data Visualization** and **Human-computer Interaction**. Our authoring tools and designs are appreciated and used by data enthusiasts, developers, and practitioners from different domains.

Education

Ph.D. candidate in Singapore Management University   Singapore
School of Computing and Information System   *2021.01 - present*
Advised by Prof. Yong Wang, Member of VIDA Lab

B.S. in University of Electronic Science and Technology of China   Chengdu, China
School of Computing Science and Engineering   *2015.09 - 2019.07*
Member of Big Data Research Center

Notable Awards

SMU Presidential Doctoral Fellowship   2023
Awarded for PhD students who have consistently shown exceptional research
achievements selected from the top 10% of PhD students.

UESTC SCSE Outstanding Student Award   2019
Awarded to students with an outstanding performance during the bachelor period.

Publications

Shaolun Ruan, Qiang Guan, Paul Griffin, Ying Mao, Yong Wang.
QuantumEyes: Towards Better Interpretability of Quantum Circuits.
IEEE Transactions on Visualization & Computer Graphics (2023): 1-13. https://doi.org/10.1109/TVCG.2023.3332999

Shaolun Ruan, Zhiding Liang, Qiang Guan, Paul Griffin, Xiaolin Wen, Yanna Lin, and Yong Wang.
VIOLET: Visual Analytics for Explainable Quantum Neural Networks.
IEEE Transactions on Visualization & Computer Graphics (2023). https://doi.org/10.1109/TVCG.2024.3388557

Shaolun Ruan, Yong Wang, Weiwen Jiang, Ying Mao, Qiang Guan.
VACSEN: A Visualization Approach for Noise Awareness in Quantum Computing.
IEEE Transactions on Visualization & Computer Graphics 29.01 (2023): 462-472. https://doi.org/10.1109/TVCG.2022.3209455

Shaolun Ruan, Ribo Yuan, Qiang Guan, Yanna Lin, Ying Mao, Weiwen Jiang, Zhepeng Wang, Wei Xu, Yong Wang.
VENUS: A Geometrical Representation for Quantum State Visualization.
Eurographics EuroVis 2023. 42-Issue 3. https://doi.org/10.1111/cgf.14827

Shaolun Ruan, Yong Wang, and Qiang Guan.
Intercept Graph: An Interactive Radial Visualization for Comparison of State Changes.
2021 IEEE Visualization Conference (VIS). IEEE, 2021: 111-115. https://doi.org/10.1109/VIS49827.2021.9623307

Shaolun Ruan, Yong Wang, Hailong Jiang, Weijia Xu, Qiang Guan.
BatchLens: A Visualization Approach for Analyzing Batch Jobs in Cloud Systems.
Proceedings of DATE 2022. IEEE, 2022: 108-111. https://ieeexplore.ieee.org/document/9774668

Hailong Jiang*, **Shaolun Ruan***, Bo Fang, Yong Wang, Qiang Guan.
Visilience: An Interactive Visualization Framework for Resilience Analysis using Control-Flow Graph.
Proceedings of IEEE PRDC 2023. https://ieeexplore.ieee.org/document/10356508

Positions

Kent State University   Ohio, U.S.
Research Assistant, member of Guan's Lab   2019.07 - 2021.09

Chengdu Guangchen Technology Co., Ltd.   Chengdu, China.
Intern and Developer, member of front-end development team   2016.04 - 06, 2017.01 - 03

University of Melbourne   Melbourne, Australia
Visiting student   2016.07 - 2016.08

University of Auckland   Auckland, New Zealand
Visiting student, studying in the Academic Language Center   2016.08

Invited Talks

VIS meets Quantum Computing, HKUST   2023.11
Invited Talk on Enhancing the Transparency of Quantum Computing using Visualization.

VAST Panel, HKUST   2023.12
Invited Speaker in the VisLab HAI Seminar.

Towards Making Your VIS Paper Writing Better, UESTC, China   2024.01
Invited Talk About the Sharing of Academic Writing.

VIS meets Quantum Computing, Sichuan University, China   2024.01
Invited Talk on Enhancing the Transparency of Quantum Computing using Visualization.

Stepping Into the Era of Interpretable Quantum Computing, University of Notre Dame   2024.02
Invited Lecture in QuCS Lecture Series.

VIS meets Quantum Computing, Central South University   2024.04
Invited Talk on Enhancing the Transparency of Quantum Computing using Visualization.

VIS meets Quantum Computing, GAMES Webinar   2024.05
Invited Speaker for Research Talk and Panel Discussion.

Teaching

Teaching Assistant   School of Computing and Information System, SMU
IS428 - Visual Analytics for Business Intelligence   AY2023-24, Spring

Teaching Assistant   Lee Kong Chian School of Business, SMU
MKTG101 - Marketing   AY2024-25, Fall