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). To Appear.

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.