

Qianwen Wang

DATA VISUALIZATION MEETS ML

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Education

Hong Kong University of Science & Technology

PhD Candidate, VIS Lab

Supervisor: Prof. Huamin Qu

Hong Kong, China

Sep 2015 - Now

Xi'an Jiao Tong University

BEng., Electronic Science & Technology

Xi'an, China

Aug 2011 - 2015

Interest & Skills

Interest Data Visualization for ML, Human-Machine Collaboration, Narrative Visualization

Programming Python, JavaScript, Typescript, Matlab, HTML, CSS

Frameworks React, Vue, D3, Flask, WebGL

Experience

Visiting Scholar

Advisor: Prof. Nils Gehlenborg

Harvard University

Apr 2020 -

Research Visiting Student

Advisor: Prof. Min Chen

Oxford University

Aug 2019 - Dec 2019

Paper Reviewer

- EuroVis, 2020
- ACM CHI Conference, 2020
- IEEE Visual Analytics Science and Technology (VAST), 2018, 2019, 2020
- China Visualization and Visual Analytics Conference (China VIS), 2019

Research Assistant

XAI Project, Project Leader

HKUST

Oct 2018 -

- Write the report: Visualization in AI Product Life Cycle
- Develop a visualization tool to diagnose the deep learning model used in screen testing

Research Assistant

HSBC Air Pollution Project

HKUST

May 2018 - Jul 2018

- Develop deep learning models to predict air pollution in Hong Kong

Research Intern

Systems and Networking Research Group

Mentor: Lintao Zhang

Microsoft Research Asia

Jun 2017 - Jan 2018

- Develop visualization tools to building DL models through drag and drop
- Build visualization tool to manage GPU resources
- Interactive machine learning through visualization

Teaching Assistant

Teaching Assistant in Undergraduate Course

- Probability and Random Processes
- Signals and Systems

HKUST

Feb 2016 - Dec 2018

Featured Research

Visual Analysis of Algorithmic Discrimination

- An interactive visualization tool that facilitates a better understanding and analysis of algorithmic discrimination.
- A novel set visualization that combines an extended Euler diagram with a matrix-based set visualization.

HKUST & Tsinghua University

Dec 2018 -

Increasing Transparency and Controllability in AutoML

- A multi-granularity visualization is proposed to enable users to monitor the AutoML process, analyze the searched models, and refine the search space in real time.
- <https://github.com/HDI-Project/ATMSeer/>

HKUST & MIT

May 2018 - Feb 2019

Visual Genealogy of Deep Neural Networks

- A web-based interactive visualization tool that enables users to understand and compare typical DNN architectures, as well as to explore the evolutionary relationships among them.

HKUST & Tsinghua University

Jan 2018 - Nov 2018

Authoring Narrative Slideshows for Introducing Data Visualization Designs

- A slideshow authoring tool that assists users in introducing data visualizations to non-experts.
- An approach to hierarchically decompose a visualization design and introduce its compositions progressively.

HKUST & Microsoft Research Asia

Jan 2017 - Oct 2017

Awards

SENG Academic Award, HKUST

a prize of HK\$20,000 for students with good academic performance and research accomplishment

2018-2019

IEEE VIS Doctoral Colloquium

fund the travel, conference registration, and lodging

- an invitation-only event that co-located with IEEE VIS
- Ph.D. students present their work and receive feedback from leading senior visualization researchers

2019

Oversea Research Award, HKUST

10,000 HKD per month for an overseas research

2019

Award of Excellence, MSRA Internship Program

2018

Award of Most Feasibility, Microsoft One Week Hackathon

2017

Outstanding Graduates, Xi'an Jiao Tong University

Top 10% Graduates

2015

Educational Scholarship, Xi'an Jiao Tong University

Top 5% Students

2012, 2013, 2014

Outstanding Students, Xi'an Jiao Tong University

Top 10% Students

2012, 2013, 2014

Publication List

1. **[C]** **Qianwen Wang**, Zhenhua Xu, Zhutian Chen, Yong Wang, Shixia Liu, Huamin Qu, Visual Analysis of Algorithmic Discrimination, Submitted to ACM CHI2020
2. **[C]** **Qianwen Wang**, Yao Ming, Zhihua Jin, Qiaomu Shen, Dongyu Liu, Micah J. Smith, Kalyan Veeramachaneni, and Huamin Qu. 2019. “ATMSeer: Increasing Transparency and Controllability in Automated Machine Learning”. In Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems (**ACM CHI '19**). ACM, New York, NY, USA, Paper 681, 12 pages
3. **[J]** **Qianwen Wang**, Jun Yuan, Shuxin Chen, Hang Su, Huamin Qu, and Shixia Liu. “Visual Genealogy of Deep Neural Networks.” IEEE Transactions on Visualization and Computer Graphics (**IEEE TVCG**) doi: 10.1109/TVCG.2019.2921323
4. **[C, J]** **Qianwen Wang**, Zhen Li, Siwei Fu, Weiwei Cui, and Huamin Qu. “Narvis: Authoring Narrative Slideshows for Introducing Data Visualization Designs.” IEEE Transactions on Visualization and Computer Graphics 25, no. 1 (2018): 779-788, (**IEEE InfoVis 2018**)
5. **[C]** Zhutian Chen, Tong Wai, **Qianwen Wang**, Benjamin Bach, Huamin Qu, Augmenting Static Visualizations with PapARVis Designer, Submitted to ACM CHI2020
6. **[J]** Chen, Zhutian, Yijia Su, Yifang Wang, **Qianwen Wang**, Huamin Qu, and Yingcai Wu, “MARVisT: Authoring Glyph-based Visualization in Mobile Augmented Reality,” in IEEE Transactions on Visualization and Computer Graphics (**IEEE TVCG**). doi: 10.1109/TVCG.2019.2892415
7. **[C, J]** Yong Wang, Zhihua Jin, **Qianwen Wang**, Weiwei Cui, Tengfei Ma, Huamin Qu, “DeepDrawing: A Deep Learning Approach to Graph Drawing”, **IEEE InfoVis 2019**
8. **[C, J]** Zhutian Chen, Yun Wang, **Qianwen Wang**, Yong Wang, Huamin Qu, “Towards Automated Infographic Design: Deep Learning-based Auto-Generation of Extensible Timeline”, **IEEE InfoVis 2019**

Media Coverage

- **MIT News** Cracking open the black box of automated machine learning [↗](#)
- **DeepTech** ATMSeer 拯救工程师发际线 [↗](#)

Talks

Visual Genealogy of Deep Neural Networks Conference Presentation at IEEE VAST 2019	Vancouver, Canada <i>Oct 2019</i>
Visualization to Guide the Application of Machine Learning Invited Talk at Zhijiang Lab	Zhejiang, China <i>Jul 2019</i>
ATMSeer: Increasing Transparency and Controllability in Automated Machine Learning Conference Presentation at ACM CHI 2019	Glasgow, UK <i>May 2019</i>
Narvis: Authoring Narrative Slideshows for Introducing Data Visualization Designs Conference Presentation at IEEE InfoVis 2018	Berlin, Germany <i>Oct 2018</i>

Reference

Huamin Qu (PhD advisor)	huamin@ust.hk, Hong Kong University of Science and Technology
Nils Gehlenborg	nils@hms.harvard.edu, Harvard University
Shixia Liu	shixia@tsinghua.edu.cn, Tsinghua University
Min Chen	min.chen@oerc.ox.ac.uk, University of Oxford