

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

University of Oxford

Research Visiting Student

Supervisor: Prof. Min Chen

Oxford, UK

Aug 2019 - Dec 2019

Xi'an Jiao Tong University

BEng., Electronic Engineering

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

Featured Research

Visual Analysis of Algorithmic Discrimination

HKUST & Tsinghua University

- 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.

Dec 2018 -

Increasing Transparency and Controllability in AutoML

HKUST & MIT

- 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/>

May 2018 - Feb 2019

Visual Genealogy of Deep Neural Networks

HKUST & Tsinghua University

- 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.

Jan 2018 - Nov 2018

Authoring Narrative Slideshows for Introducing Data Visualization Designs

HKUST & Microsoft Research Asia

- 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.

Jan 2017 - Oct 2017

Experience

Paper Reviewer

- IEEE Visual Analytics Science and Technology (VAST), 2018 & 2019
- China Visualization and Visual Analytics Conference (China Vis), 2019
- China Vis Survey Papers, 2019

Research Assistant

Huawei 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

HKUST
Feb 2016 - Dec 2018

- Probability and Random Processes
- Signals and Systems

Awards

SENG Academic Award, HKUST

2018-2019

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

IEEE VIS Doctoral Colloquium

2019

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

Oversea Research Award, HKUST

2019

10,000 HKD per month for an overseas research

Award of Excellence, MSRA Internship Program

2018

Award of Most Feasibility, Microsoft One Week Hackathon

2017

Outstanding Graduates, Xi'an Jiao Tong University

2015

Top 10% Graduates

Educational Scholarship, Xi'an Jiao Tong University

2012, 2013, 2014

Top 5% Students

Outstanding Students, Xi'an Jiao Tong University

2012, 2013, 2014

Top 10% Students

Media Coverage

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

Publication List

- **[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
- **[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
- **[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**)
- **[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
- **[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**
- **[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**

Talks

Visual Genealogy of Deep Neural Networks

Conference Presentation at **IEEE VAST 2019**

Vancouver, Canada

Oct 2019

Visualization for DL Diagnosis: A Practice in Screen Testing

Invited Talk at **Huawei 2012 Lab**

Shenzhen, China

Aug 2019

Visualization to Guide the Application of Machine Learning

Invited Talk at **Zhejiang Lab**

Zhejiang, China

Jul 2019

ATMSeer: Increasing Transparency and Controllability in Automated Machine Learning

Conference Presentation at **ACM CHI 2019**

Glasgow, UK

May 2019

Visualization in AI Product Life Cycle

Invited Talk at **Huawei 2012 Lab**

Shenzhen, China

Nov 2018

Narvis: Authoring Narrative Slideshows for Introducing Data Visualization Designs

Conference Presentation at **IEEE InfoVis 2018**

Berlin, Germany

Oct 2018