Yao Ming

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Education

Aug 2016 - Present **Ph.D. in Computer Science**
Hong Kong University of Science and Technology, Hong Kong
- Supervisor: Prof. Huamin Qu
- Research Interests: Interpretable/Explainable Machine Learning, Visualization.
- CGA: 4.2/4.3
- Selected Courses: Advanced Algorithm Techniques, Machine Learning, Parallel Programming, Computer Vision, Advanced Statistics, Theory of Computation.

Aug 2012 - Jul 2016 **B.S. in Civil Engineering, B.S. in Economics**
Tsinghua University, Beijing, China
- Ranking: 1st of 93 students; Overall GPA: 93/100.
- Selected Courses (CS): Data Structure & Algorithms, Software Engineering, Database, Operating System, Advanced Computer Graphics.

Publications

Interpretable and Steerable Sequence Learning via Prototypes
Yao Ming, Panpan Xu, Huamin Qu, Liu Ren.
Proceedings of the 24th ACM SIGKDD International Conference on Knowledge Discovery & Data Mining, 2019.
[Accepted for **Oral Presentation**, 9% Acceptance Rate]

ATMSeer: Increasing Transparency and Controllability in Automated Machine Learning
Qianwen Wang, **Yao Ming**, Zhihua Jin, Qiaomu Shen, Dongyu Liu, Micah J. Smith, Kalyan Veeramachaneni, Huamin Qu.
Proceedings of the SIGCHI Conference on Human Factors in Computing Systems, 2019 (to appear).
[24% Acceptance Rate]

RuleMatrix: Visualizing and Understanding Classifiers using Rules
Yao Ming, Huamin Qu, Enrico Bertini.
IEEE Transactions on Visualization and Computer Graphics, 2018.
[23% Acceptance Rate | Explainable ML]

A Survey on Visualization for Explainable Classifier
Yao Ming, Huamin Qu (Supervisor).
VisLab@HKUST, 2017.

Understanding Hidden Memories of Recurrent Neural Networks

Yao Ming, Shaozu Cao, Ruixiang Zhang, Zhen Li, Yuanzhe Chen, Yangqiu Song, Huamin Qu.

IEEE Visualization Conference (VAST), 2017.

[24% Acceptance Rate]

A Visual Analytics Approach for Understanding Egocentric Intimacy Network Evolution and Impact Propagation in MMORPGs

Quan Li, Qiaomu Shen, **Yao Ming**, Peng Xu, Yun Wang, Xiaojuan Ma, Huamin Qu.

Proceedings of IEEE Pacific Visualization Symposium, 2017.

Research / Work Experience

Aug 2016 - Present **HKUST-WeChat Joint Lab on AI Technology**, Hong Kong
Lab Member

Jun 2018 - Present **Alibaba Damo Academy**, Hangzhou, China
Research Intern (advised by Dr. Hongxia Yang)

- Developing **interpretable graph embedding algorithms**.

Aug 2018 - Dec 2018 **Robert Bosch LLC**, Sunnyvale, CA
Research Intern (advised by Dr. Panpan Xu), Human Machine Interaction Group

- Developed **interpretable machine learning** models for sequence data.
- Designed and implemented visual analytics solutions for interpreting and steering LSTMs.
- Research output: ProSeNet (accepted by **KDD'19 for oral presentation**)

Jan 2018 - Jun 2018 **New York University**, NY
Research Intern (advised by Prof. Enrico Bertini), VIDA Lab

- Developed a **model-agnostic** algorithm that extracts **surrogate rule lists** for explaining any classification models to non-experts.
- Built explanatory visual interfaces for investigating the behavior of machine learning models.
- Research output: RuleMatrix (published on **TVCG**, presented on **VIS'18**)

Aug 2015 - Sep 2015 **Carnegie Mellon University**, Pittsburg, PA
Research Intern (advised by Dr. Xuesong Liu), Dept. of CEE

- Designed a system to integrate work order data and building information models (BIM).

Mar 2015 - Jul 2015 **Tsinghua University**, Beijing, China
Research Assistant (advised by Prof. Yong-Jin Liu), Dept. of Computer Science

- Developed a fast mesh decomposition approach based on volume computing.

Honors and Awards

2018 **Yelp Dataset Challenge Round 10 Grand Prize Award**
For "Understanding Hiddem Memories of Recurrent Neural Networks"

2016 - 2020 **Hong Kong PhD Fellowship (HKPF)**
250 Fellowships awarded in all 8 Universities in Hong Kong each year .

2016 **Outstanding Graduate of Beijing**
Awarded to graduates with outstanding academic performance of the universities at Beijing

2015 Nomination of **Tsinghua Top Talent Scholarship**
Considered to be the most prestigious prize for outstanding students at Tsinghua.
Around **50** students nominated from **3000+** students each year.

2015 National Endeavor Scholarship
Awarded to students with **top 2%** academic performance each year.

2015 Second Prize in the 1st National Geotechnical Engineering Contest

2015 Honorable Mention in 2015 MCM/ICM

2014 2nd Prize in the 20th Tsinghua Structure Design Competition
Over 100 teams participated; 10 selected to go to final; 3 awarded the 2nd prize.

2014 **National Scholarship**
Awarded to students with **top 2%** academic performance each year.

2013 First-class Comprehensive Scholarship of Tsinghua University

Invited Talks

Oct 2018 Explainable Machine Learning via Surrogate Rules
Bay Area Visual Analytics Symposium, Sunnyvale, CA, U.S..

Oct 2018 RuleMatrix: Visualizing and Understanding Classifiers with Rules
IEEE VIS Conference, Berlin, Germany.

Nov 2017 A Survey on Visualization for Explainable Classifiers
MSBD5005 Guest Lecture, HKUST, Hong Kong.

Oct 2017 Understanding Hidden Memories of Recurrent Neural Network
IEEE VIS Conference, Phoenix, AZ, U.S..

Services

Reviewer of ACM Conference on Human Factors in Computing Systems (CHI), 2019
ACM Conference on Human Factors in Computing Systems (CHI) Late Breaking Work, 2019
IEEE Transactions on Visualization and Computer Graphics (TVCG), 2017, 2018
IEEE VIS (VAST, InfoVis, and SciVis) Conference, 2018, 2019
IEEE Pacific Visualization Symposium (PacificVis), 2018
IEEE Eurographics/VGTC Conference on Visualization (EuroVis), 2019
IEEE Computer Graphics and Applications (CG&A) Magazine, 2018
China Vis, 2019

Skills

Programming Proficient in Python, C++, and JavaScript/Typescript
Familiar with MATLAB and Java

ML Tools PyTorch, TensorFlow, Keras, Scikit-Learn

Web Dev React, NodeJS, VueJS, D3.js, MongoDB, MySQL