

# Yao Ming

CYT 3007, HKUST  
Clear Water Bay, Hong Kong  
☎ (+852) 5499 4004  
☎ (+86) 18666218906  
✉ yaoming.thu@gmail.com  
🏠 www.myao000.com

## Education

Aug 2016 **Ph.D. in Computer Science**

- Present **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 **B.S. in Civil Engineering, B.S. in Economics**

- Jul 2016 **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 **HKUST-WeChat Joint Lab on AI Technology**, Hong Kong

- Present Lab Member

Jun 2019 **Alibaba Damo Academy**, Hangzhou, China

- Present Research Intern (advised by [Dr. Hongxia Yang](#))

- Developing **interpretable graph embedding algorithms**.

Aug 2018 **Robert Bosch LLC**, Sunnyvale, CA

- Dec 2018 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 **New York University**, NY

- Jun 2018 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 **Carnegie Mellon University**, Pittsburg, PA

- Sep 2015 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 **Tsinghua University**, Beijing, China

- Jul 2015 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 Hidden 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