CYT3007, CSE Department, HKUST
Clear Water Bay, Kowloon, Hong Kong
(852) 59334516
ywangct@connect.ust.hk
www.yong-wang.org

Yong Wang

Education

2014 – 2018 **Ph.D in Computer Science**, *Department of Computer Science and Engineering*, **The Hong Kong University of Science and Technology (HKUST)**, Hong Kong.
- Supervisor: Prof. Huamin Qu.
- Research Interest: **Visual Analytics of Big Data, Graph Mining** and Image Processing.

2011 – 2014 **Master Degree of Pattern Recognition & Intelligent System**, *School of Automation*, **Huazhong University of Sci. & Tech. (HUST)**, Wuhan, China.

2007 – 2011 **Bachelor Degree of Automation**, *School of Aerospace*, **Harbin Institute of Technology (HIT)**, Harbin, China.

Research/Working Experience

2018 – 2020 **Post-doctoral Fellow**, *Department of Computer Science and Engineering*, HKUST, Hong Kong, China.

2016 **Research Intern**, *Graph Computing Group*, IBM T. J. Watson Research Center, New York, USA.

2014 **Research Intern**, *Vision Group*, Dajiang Innovation (DJI), Shenzhen, China.

Projects

2019 – 2020 **AI-powered Visual Analytics Solutions for Communication and Presentation Coaching**, *Team Project*.
- Lead the team to develop AI-based visual analytics techniques and visualization system to help both coaches and public speaking trainees to conduct better presentation training. The information of audio, text, gesture and posture of the presentations is quantitatively analyzed to guide efficient presentation training.
- Coordinate the collaboration between HKUST team and our industry collaborator.
- Developing tools / languages: Javascript, Python, D3, Vuejs, PyTorch and MongoDB

2018 – 2020 **An Open Learning Design, Data Analytics and Visualization Framework for E-Learning**, *Team Project*.
- Lead the team to develop open-source analytical and visualization methods for K-12 resource-based e-learning in mathematics and computational thinking
- Coordinate the collaboration between HKUST team and MIT and HKU teams (url: E-learning project page)
- Developing tools / languages: Javascript, Python, D3, Vuejs and MongoDB

2017–2018 **Visual Analysis for Face Emotion of Videos**, *Team Project*.
- Built a online system for collecting, labeling and analyzing face emotion of videos, e.g., kindergarten videos.
- Developing tools / languages: Javascript, Python, Vuejs, D3, TensorFlow and MongoDB

2016 **Visualizing Research Impact Through Citation Data**, *Research Project*.
- Proposed a novel method for visualizing research impact.
- Developing tools / languages: Javascript, Python, AngularJS, D3 and MongoDB

2015 **Visual Exploration of Coauthor Relationship**, *Team Project*.
- Explored the HKUST publication dataset and visualized the co-author network of each HKUST professor.
- Developing tools / languages: Javascript, Python, AngularJS, D3 and MongoDB

2015 **Ambiguity Analysis in Graph Visualization Layouts**, *Research Project*.
- Systematically analyzed the possible ambiguities in graph layouts and developed a prototype system to visualize it (published in infoVis 2015).
- Developing tools / languages: Javascript, Python, AngularJS, D3, three.js and MongoDB

2014 **Visualization for PQE-Defense log data of HKUST CSE department** , *Independent Project*.
- Visualized the PQE-Defense log data of HKUST CSE department in the past 16 years (url: pqeDefenseVis).
- Developing tools / languages: Javascript, Python, AngularJS, D3 and MySQL

2013 **Leucocyte Segmentation and Classification**, *Research Project*.
- Built a framework for leucocyte location and segmentation, and designed both a fast auto-focus algorithm and an improved segmentation method using Support Vector Machine.
- Developing tools / languages: C/C++, openCV

Publications and Patents

***** Corresponding author

Papers

[1] **Yong Wang**, Zhihua Jin, Qianwen Wang, Weiwei Cui, Tengfei Ma and Huamin Qu. DeepDrawing: A Deep Learning Approach to Graph Drawing. *IEEE Transactions on Visualization and Computer Graphics (Proceedings of InfoVis 2019),* 26(1):676-686, 2019.

[2] **Yong Wang**, Daniel Archambault, Hammad Haleem, Torsten Moeller, Yanhong Wu, Huamin Qu. Nonuniform Timeslicing of Dynamic Graphs Based on Visual Complexity. *Proceedings of InfoVis 2019 (Short Paper).* 2019.

[3] Xingbo Wang, Haipeng Zeng, **Yong Wang***, Aoyu Wu, Zhida Sun, Xiaojuan Ma and Huamin Qu. VoiceCoach: Interactive Evidence-based Training for Voice Modulation Skills in Public Speaking. Accepted by *The SIGCHI Conference on Human Factors in Computing Systems (CHI 2020).* To Appear.

[4] Dong Sun, Zezheng Feng, Yuanzhe Chen, **Yong Wang**, Jia Zeng, Mingxuan Yuan, Ting-Chuen Pong and Huamin Qu. DFSeer: A Visual Analytics Approach to Facilitate Model Selection for Demand Forecasting. Accepted by *The SIGCHI Conference on Human Factors in Computing Systems (CHI 2020).* To Appear.

[5] Haipeng Zeng, Xinhuan Shu, Yanbang Wang, **Yong Wang**, Liguo Zhang, Ting-Chuen Pong and Huamin Qu. EmotionCues: Emotion-Oriented Visual Summarization of Classroom Videos. *IEEE Transcactions on Visualization and Computer Graphics.* 2020.

[6] Huan Wei, Haotian Li, Meng Xia, **Yong Wang*** and Huamin Qu. Predicting Student Performance in Interactive Online Question Pools Using Mouse Interaction Features. *the 10th International Learning Analytics & Knowledge Conference (LAK20).* To Appear.

[7] Dong Sun, Renfei Huang, Yuanzhe Chen, **Yong Wang*** , Jia Zeng, Mingxuan Yuan, Ting-Chuen Pong and Huamin Qu. PlanningVis: A Visual Analytics Approach to Production Planning in Smart Factories. *IEEE Transcactions on Visualization and Computer Graphics (Proceedings of VAST 2019),* 26(1):579-589, 2019.

[8] Haipeng Zeng, Xingbo Wang, Aoyu Wu, **Yong Wang***, Quan Li, Alex Endert and Huamin Qu. EmoCo: Visual Analysis of Emotion Coherence in Presentation Videos. *IEEE Transcactions on Visualization and Computer Graphics (Proceedings of VAST 2019),* 26(1):927-937, 2019.

[9] Zhutian Chen, Yun Wang, Qianwen Wang, **Yong Wang** and Huamin Qu. Towards Automated Infographic Design: Deep Learning-based Auto-Generation of Extensible Timeline. *IEEE Transcactions on Visualization and Computer Graphics (Proceedings of InfoVis 2019),* 26(1):917-926, 2019.

[10] Meng Xia, Mingfei Sun, Huan Wei, Qing Chen, **Yong Wang**, Lei Shi, Huamin Qu and Xiaojuan Ma. PeerLens: Peer-inspired Interactive Learning PathPlanning in Online Question Pool. *The SIGCHI Conference on Human Factors in Computing Systems (CHI 2019).* Glasgow, Scotland UK, May 2019.

[11] Hammad Haleem, **Yong Wang**, Abishek Puri, Sahil Wadhwa and Huamin Qu. Evaluating the Readability of Force Directed Graph Layouts: A Deep Learning Approach. *IEEE Computer Graphics and Applications (Special Issue on Visual Computing with Deep Learning),* 39(4):40-53, 2019.

[12] **Yong Wang**, Hammad Haleem, Conglei Shi, Yanhong Wu, Xun Zhao, Siwei Fu and Huamin Qu. Towards Easy Comparison of Local Businesses Using Online Reviews. *Computer Graphics Forum (Proceedings of EuroVis 2018),* 37(3):63-74, 2018.

[13] **Yong Wang**, Conglei Shi, Liangyue Li, Hanghang Tong and Huamin Qu. Visualizing Research Impact Through Citation Data. *ACM Transactions on Interactive Intelligent Systems (TiiS),* 8(1): Paper 5, 2018.

[14] Siwei Fu, **Yong Wang***, Yi Yang, Qingqing Bi, Fangzhou Guo and Huamin Qu. VisForum: A Visual Analysis System for Exploring User Groups in Online Forums. *ACM Transactions on Interactive Intelligent Systems (TiiS),* 8(1): Paper 3, 2018.

[15] Xin Zheng, **Yong Wang**, Guoyou Wang and Jianguo Liu. Fast and Robust Segmentation of White Blood Cell Images by Self-supervised Learning. *Micron,* 107:55-71, 2018.

[16] **Yong Wang**, Daniel Archambault, Carlos E. Scheidegger and Huamin Qu. A Vector Field Design Approach to Animated Transitions. *IEEE Transactions on Visualization and Computer Graphics,* 24(9):2487-2500, 2017.

[17] Xun Zhao, Yanhong Wu, Weiwei Cui, Xinnan Du, Yuan Chen, **Yong Wang**, Dik Lun Lee and Huamin Qu. SkyLens: Visual Analysis of Skyline on Multi-dimensional Data. *IEEE Transcactions on Visualization and Computer Graphics (VAST 2017).* 24(1):246-255, 2018.

[18] Liangyue Li, Hanghang Tong, **Yong Wang**, Conglei Shi, Nan Cao and Norbou Buchler. Is the Whole Greater Than the Sum of Its Parts? In *Proceedings of the 23rd ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD).* Halifax, Canada, August 2017.

[19] Chun-Fu Richard Chen, Marco Pistoia, Conglei Shi, Paolo Girolami, Joseph W. Ligman, and **Yong Wang**. UI X-Ray: Interactive Mobile UI Testing Based on Computer Vision. In *Proceedings of the 22nd International Conference on Intelligent User Interfaces (IUI).* Limassol, Cyprus, March 2017. **(IUI 2017 Best Paper Award)**

[20] **Yong Wang**, Qiaomu Shen, Daniel Archambault, Zhiguang Zhou, Min Zhu, Sixiao Yang and Huamin Qu. AmbiguityVis: Visualization of Ambiguity in Graph Layouts. *IEEE Transcactions on Visualization and Computer Graphics (InfoVis 2015),* 22(1):359–368, 2016.

[21] Xin Zheng, **Yong Wang**, Guoyou Wang and Zhong Chen. A Novel Algorithm Based on Visual Saliency Attention for Localization and Segmentation in Rapidly-Stained Leukocyte Images. *Micron,* 56:17-28, 2014.

[22] Ran Wang, Guoyou Wang, Zhong Chen, Zhigang Zeng and **Yong Wang**. A palm vein identification system based on Gabor wavelet features. *Neural Computing and Applications,* 24(1): 161-168, 2014.

[23] **Yong Wang**, Guoyou Wang, Ran Wang, Yuanchun Xia and Zhong Chen. A Novel and Robust Algorithm for License Plate Location Using Perceptual Salient Features. In *Proceedings of 2013 International conference on Advances in Industrial Control, Electronics and Computer Engineering*. Kinston, Canada, May 2013.

[24] Xin Zheng, Guoyou Wang, **Yong Wang**. White Blood Cell Segmentation Using Expectation-Maximization and Automatic Support Vector Machine Learning. *Journal of Data Acquisition and Processing (Chinese),* 2013, 28(5): 614-619.

Patents

[25] Guoyou Wang, **Yong Wang**, Xin Zheng and Ran Wang. A Precise Segmentation Method and System Based on SVM for White Blood Cell Images. *Chinese Patent: CN103473739 A, 2013-12-25.*

Posters

[26] Meng Xia, Huan Wei, Min Xu, Leo Yu Ho Lo, **Yong Wang**, Rong Zhang, Huamin Qu. Visual Analytics of Student Learning Behaviors on K-12 Mathematics E-learning Platforms. *Proceedings of IEEE VIS 2019 Poster, 2019.* **(IEEE VIS 2019 Best Poster Award)**

Awards and Honors

2019 **IEEE VIS Best Poster Award**.

2018–2020 **Funded by the PH-ITF program of Innovation and Technology Commission of Hong Kong**.

2017 **ACM IUI Best Paper Award**.

2016 **HKUST Overseas Research Award**.

2013 **National Scholarship**, aimed for top 3 %.

2011–2013 **HUST 1st Prize Graduate Scholarship for three times**.

2008–2011 **People's scholarship for six times**.

2010 **3rd Prize of Mathematical Modeling Contest in Northeastern China**.

2009 **2nd Prize of Bionic Robot Contest of HIT**, *ranked top 6 %*.

Teaching Experience

2015–2016 **Teaching Assistant**, *Comp2012: Object-Oriented Programming and Data Structures*, HKUST.

2015 **Teaching Assistant**, *Comp1022p: Introduction to Computing with Java*, HKUST.

Professional Services

PC Member ICPADS 2018, MLVIS 2019, MLVIS 2020, IUI 2020

Reviewer IEEE VIS (InfoVis, VAST and SciVis) Conference, 2016, 2017, 2018, 2019
ACM IUI, 2019, 2020
The Thirty-First AAAI Conference on Artificial Intelligence (AAAI), 2017
The ACM CHI Conference (CHI), 2017, 2019, 2020
IEEE Big Data, 2017
IEEE Pacific Visualization (PacificVis) Symposium, 2015, 2017, 2018, 2019
IEEE Transaction on Visualization and Computer Graphics (TVCG), 2017, 2020
IEEE Eurographics/VGTC Symposium on Visualization (EuroVis), 2016
The 3rd China Visualization and Visual Analytics Conference (ChinaVis), 2016
ACM Transactions on Interactive Intelligent Systems (TiiS), 2017, 2020
Micron, 2014

Volunteer IEEE VIS Conference, Chicago, USA, 2015

Skills

Programming Proficient in Javascript, C/C++, Python, HTML, PLC; Familiar with Matlab, JAVA

Tools D3, MongoDB, MySQL, PyTorch, TensorFlow, OpenCV, AngularJS, Three.js, Vuejs, LaTeX

Languages Chinese Mandarin (native), English (professional working proficiency)