Fumeng Yang

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In this CV, most names and entities are clickable links to their respective websites.

Appointments

2024 – **Assistant Professor**, University of Maryland, College Park
Department of Computer Science

2022 – 2024 **Postdoctoral Fellow**, Northwestern University
CRA/CCC NSF-funded Computing Innovation Fellows (CIFellows); Mentor: Matthew Kay

Education

2021 **Ph.D. in Computer Science**, Brown University
Committee: David H. Laidlaw (advisor), James Tompkin, Jeff Huang, David Badre
Dissertation: Fusing Visualization, Virtual Reality, and Vision Science for Scientific Thinking

2016 **M.Sc. in Computer Science**, Tufts University
Advisor: Remco Chang

2013 **B.Eng. in Computer Science and Technology**, Shandong University
Advisor: Zhifang Jiang

Awards & Honors

Papers & Dissertations

2024 **Best Paper Award** for "In Dice We Trust ..." (P14) as first author, ACM CHI
2023 **Best Paper Award** for "Swaying the Public? ..." (P12) as first author, IEEE VIS
2023 **Best Paper Honorable Mention Award** for "Subjective ..." (P10) as first author, ACM CHI
2021 **Best Paper Honorable Mention Award** for "Rethinking ..." (P7) as co-first author, IEEE VIS
2020 **Best Paper Honorable Mention Award** for "How Do ..." (P4) as first author, ACM IUI
2014 **Best Undergraduate Dissertation of the Province**, Ministry of Education Shandong

Fellowships & Scholarships

2021 **Computing Innovation Fellows (CIFellows)**, CRA/CCC/NSF, ~$310,000
2010 **National Scholarship**, Ministry of Education China, ¥8,000 (~$1,100)

Communities & Services

2024 **Best Research Mentor Award**, Department of Computer Science, Northwestern University

2022 – 2024 **Special Recognitions for Exceptional Reviews**, ACM CHI (5), IEEE VIS (7)

Publications

Top Computer Science conferences (e.g., CHI, VIS) maintain rigorous review processes and high selectivity, with archival papers often valued on par with journals (e.g., VIS papers are published in TVCG). Students and postdocs typically lead these efforts and are listed as first authors. Underlined names indicate students or scholars I mentored.

Peer-reviewed Full-length Conference & Journal Articles

2024 P16 **The Backstory to "Swaying the Public": A Design Chronicle of Election Forecast Visualizations**
Fumeng Yang, Mandi Cai, Chloe Mortenson, Hoda Fakhari, Ayse D. Lokmanoglu, Nicholas Diakopoulos, Erik C. Nisbet, Matthew Kay
IEEE Transactions on Visualization and Computer Graphics (TVCG)
Proceedings of IEEE Visualization and Visual Analytics Conference (VIS)

P15 **Promises and Pitfalls: Using Large Language Models to Generate Visualization Items**
Yuan Cui, Lily W. Ge, Yiren Ding, Lane Harrison, **Fumeng Yang**, Matthew Kay
IEEE Transactions on Visualization and Computer Graphics (TVCG)
Proceedings of IEEE Visualization and Visual Analytics Conference (VIS)

P14 **In Dice We Trust: Uncertainty Displays for Trusting Election Forecasts Over Time** DOI
Fumeng Yang, Chloe Mortenson, Erik C. Nisbet, Nicholas Diakopoulos, Matthew Kay
Proceedings of the ACM CHI Conference on Human Factors in Computing Systems (CHI)
Best Paper Award (top 1%)

P13 **A Comparative Study on Visualizations of Scheduled Event Sequences: Gantt, Extended Gantt, and Stringline Charts** DOI
Junxiu Tang, **Fumeng Yang**, Jiang Wu, Yifang Wang, Jiayi Zhou, Xiwen Cai, Lingyun Yu, Yingcai Wu
IEEE Transactions on Visualization and Computer Graphics (TVCG)

2023 P12 **Swaying the Public? Impacts of Election Forecast Visualizations on Emotion, Trust, and Intention in the 2022 U.S. Midterms** DOI
Fumeng Yang, Mandi Cai, Chloe Mortenson, Hoda Fakhari, Ayse D. Lokmanoglu, Jessica Hullman, Steven Franconeri, Nicholas Diakopoulos, Erik C. Nisbet, Matthew Kay
IEEE Transactions on Visualization and Computer Graphics (TVCG)
Proceedings of IEEE Visualization and Visual Analytics Conference (VIS)
Best Paper Award (top 1%)

P11 **Adaptive Assessment of Visualization Literacy** DOI
Yuan Cui, Lily W. Ge, Yiren Ding, **Fumeng Yang**, Lane Harrison, Matthew Kay
IEEE Transactions on Visualization and Computer Graphics (TVCG)
Proceedings of IEEE Visualization and Visual Analytics Conference (VIS)

P10 **Subjective Probability Correction for Uncertainty Representations** DOI
Fumeng Yang, Maryam Hedayati, Matthew Kay
Proceedings of the ACM CHI Conference on Human Factors in Computing Systems (CHI)
Honorable Mention Award (top 5%)

P9 **How Can Deep Neural Networks Aid Visualization Perception Research?** DOI
Fumeng Yang, Yuxin Ma, Lane Harrison, James Tompkin, David H. Laidlaw
Proceedings of the ACM CHI Conference on Human Factors in Computing Systems (CHI)

2022 P8 **Visual Cue Effects on a Classification Accuracy Estimation Task in Immersive Scatterplots** DOI
Fumeng Yang, James Tompkin, Lane Harrison, David H. Laidlaw
IEEE Transactions on Visualization and Computer Graphics (TVCG)

2021 P7 **Rethinking the Ranks of Visual Channels** DOI
Caitlyn M. McColeman*, **Fumeng Yang***, Timothy F. Brady, Steven Franconeri
IEEE Transactions on Visualization and Computer Graphics (TVCG)
Proceedings of IEEE Visualization and Visual Analytics Conference (VIS)
Honorable Mention Award (top 5%) * equal contribution

2020 P6 **Revealing Perceptual Proxies with Adversarial Examples** DOI
Brian D. Ondov, **Fumeng Yang**, Matthew Kay, Niklas Elmqvist, Steven Franconeri
IEEE Transactions on Visualization and Computer Graphics (TVCG)
Proceedings of the IEEE Visualization and Visual Analytics Conference (VIS)

P5 **A Virtual Reality Memory Palace Variant Aids Knowledge Retrieval from Scholarly Articles** DOI
Fumeng Yang, Jing Qian, Johannes Novotny, David Badre, Cullen D. Jackson, David H. Laidlaw
IEEE Transactions on Visualization and Computer Graphics (TVCG)

P4 **How Do Visual Explanations Foster End Users' Appropriate Trust in Machine Learning?** DOI
Fumeng Yang, Zhuanyi Huang, Jean Scholtz, Dustin L. Arendt
Proceedings of the ACM Conference on Intelligent User Interfaces (IUI)
Honorable Mention Award (top 1%)

2018 P3 **Remotion: A Motion-Based Capture and Replay Platform of Mobile Device Interaction for Remote Usability Testing** DOI
Jing Qian, Arielle Chapin, Alexandra Papoutsaki, **Fumeng Yang**, Klaas Nelissen, Jeff Huang
Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (UbiComp)

P2 **Correlation Judgment and Visualization Features: A Comparative Study** DOI
Fumeng Yang, Lane Harrison, Ronald A. Rensink, Steven Franconeri, Remco Chang
IEEE Transactions on Visualization and Computer Graphics (TVCG)

2014 P1 **Ranking Visualizations of Correlation Using Weber's Law** DOI
Lane Harrison, **Fumeng Yang**, Steven Franconeri, Remco Chang
IEEE Transactions on Visualization and Computer Graphics (TVCG)
Proceedings of the IEEE Visualization and Visual Analytics Conference (VIS)

Lightly-reviewed and Invited Articles

2022 L4 **Transparent Practices for Quantitative Empirical Research** DOI
Chat Wacharamanotham, **Fumeng Yang**, Xiaoying Pu, Abhraneel Sarma, Lace Padilla
Proceedings of the Extended Abstracts on Human Factors in Computing Systems (CHI course proposal)

2020 L3 **Portalware: A Smartphone-Wearable Dual-Display System for Expanding the Free-Hand Interaction Region in Augmented Reality** DOI
Jing Qian, Meredith Young-Ng, Xiangyu Li, Angel Cheung, **Fumeng Yang**, Jeff Huang
Proceedings of the Extended Abstracts on Human Factors in Computing Systems (CHI LBW)

2018 L2 **Crush Your Data with ViC2ES then CHISSL Away** DOI
Dustin L. Arendt, Lyndsey Franklin, **Fumeng Yang**, Brooke Brisbois, Ryan LaMothe
Proceedings of the IEEE Symposium on Visualization for Cyber Security (VizSec)

2016 L1 **From Vision Science to Data Science: Applying Perception to Problems in Big Data** DOI
Remco Chang, **Fumeng Yang**, Marianne Procopio
Human Vision and Electronic Imaging (HVEI)

Mentoring

Doctoral Exams/Thesis Committees

2024 **Wentao Guo**, Computer Science, University of Maryland, College Park
2024 **Kyle Seelman**, Computer Science, University of Maryland, College Park
2024 **Yuan Cui**, Computer Science, Northwestern University

2024 **Kazi Tasnim Zinat**, Computer Science, University of Maryland, College Park

Prior to University of Maryland, College Park

2022 – 2024 **Yuan Cui**, Ph.D. student, co-mentored with Matthew Kay for P11 and P15
2022 – 2023 **Mandi Cai**, Ph.D. student, co-mentored with Matthew Kay for P12
2022 – 2023 **Maryam Hedayati**, Ph.D. student, sub-mentored with Matthew Kay for P10
2022 – 2024 **Junxiu Tang**, Ph.D. student at Zhejiang University, advised on P13
2017 **Zachary Dixon**, undergraduate, worked on data cubes in VR

Peer Mentoring

2019 – 2020 **Peer mentor**, advised students on applying for graduate schools or starting their Ph.D.
2009 – 2011 **Academic peer mentor**, Shandong University, moderated between faculty and students

Teaching

University-level Courses

2024 **cmsc839e: Uncertainty Communication for Decision-making**
University of Maryland, College Park; Students: 23; TA: Huy Nghiem

Conference Courses

2022 – 2023 **Transparent Practices for Quantitative Empirical Research**
Co-instructors: Chat Wacharamanotham, Abhraneel Sarma, Xiaoying Pu, Lace Padilla, Maryam Hedayati. This is a lecture series with rolling instructors. Attendees: 22, 6, 8
ACM CHI (2022 online, 2023 hybrid); IEEE VIS (2023 in-person)

Guest Lectures

2023 **Making Appropriate Decisions with Uncertainty Visualizations**, Georgia Tech
Professor: Yalong Yang. Students: ~65
cs 4460: Introduction to Information Visualization

2022 **Interaction and Animation (and its lab session)**, Northwestern University
Professor: Matthew Kay. Students: 38, 55 (twice)
comp_sci 333: Interactive Information Visualization

Teaching Assistantships

2018 – 2020 **csci2370: Interdisciplinary Scientific Visualization**, Brown University
Instructor: David H. Laidlaw. Students: 4, 4 (twice)
Provided feedback on student projects and reports; helped design the course syllabus

2019 **csci1951a: Data Science**, Brown University
Instructor: Ellie Pavlick. Students: 203
Maintained the course website; contributed to course materials

2015 – 2016 **comp160: Algorithms**, Tufts University
Instructor: Greg Aloupis. Students: 82, 111 (twice)
Graded assignments; held office hours

2014 – 2015 **comp150VIZ: Visualization**, Tufts University
Instructors: Remco Chang, Lane Harrison. Students: 33, 60 (twice)
Head TA; designed 9 labs and 5 assignments

2013 – 2014 **comp40: Machine Structure and Assembly-Language Programming**, Tufts University
Instructors: Noah Mendelsohn, Mark Sheldon. Students: 98, 91 (twice)
Head TA; maintained and upgraded the grading scripts

Teaching Certification

2021 **Certificate I: Sheridan Teaching Seminar - Reflective Teaching**, Brown University
Completed four seminars on teaching skills; gave two short lectures and obtained feedback

Professional Service

Editorial Activities

2024 – The Journal of Visualization and Interaction (JoVI), Associate Editor

Program Committees

2024 – The ACM CHI Conference on Human Factors in Computing Systems (CHI), Associate Chair
2024 IEEE Visualization and Visual Analytics Conference (VIS), full papers
2024 Symposium on Visualization in Data Science (VDS)
2024 IEEE Workshop on Uncertainty Visualization
2023 Eurographics Conference on Visualization (EuroVis), short papers
2022 – 2023 IEEE Visualization and Visual Analytics Conference (VIS), short papers
2020 – 2021 International Symposium on Visual Computing (ISVC)

Paper Reviews

2024 IEEE Computer Graphics and Applications (CGA)
2023 Workshop on Novel Directions in Vision Science and Visualization Research (VisXVision)
2023 International Journal of Human-Computer Studies (IJHCS)
2022 – 2024 Visual Informatics (VISINF)

2022 Workshop on TRust and EXpertise in Visualization (TREX VIS)
2022 The ACM Special Interest Group on Computer Graphics (SIGGRAPH), posters
2021 – 2023 IEEE International Symposium on Mixed and Augmented Reality (ISMAR)
2019 – 2024 Eurographics Conference on Visualization (EuroVis)
2020 – 2022 Experimental Psychology (EXPPSY)
2020 Advances in Cognitive Psychology (ACP)
2019 – 2024 IEEE Transactions on Visualization and Computer Graphics (TVCG)
2019 Journal of Visual Communication and Image Representation (JVCI)
2019 – 2023 The ACM CHI Conference on Human Factors in Computing Systems (CHI)
2018 – 2024 IEEE Visualization and Visual Analytics Conference (VIS)
2018 – 2021 China Visualization Conference (ChinaVis)

Organizing Committees

2017 – 2020 **Student Volunteer Chairs**: IEEE Visualization and Visual Analytics Conference (VIS)
Co-chairs: Timothy Luciani, Tim Gerrits, Bon A. Adriel, John Wenskovitch, Thomas Torsney-Weir. SVs/Applicants: 42/143, 43/181, 46/55 (three times)

University Services

2024 **Computer Science Graduate Admissions Committee**, University of Maryland, College Park

Student Volunteers

2019 **Student Volunteer**: ACM International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS)

2014 – 2017 **Student Volunteer** (2014), **Student Volunteer Supervisor** (2015), **Day Captain** (2017): IEEE Visualization and Visual Analytics Conference (VIS)

Public Appearance

Invited Talks

2024 **The Future is Not Set: Visual Decision-making with Predictive Models** (job talk)
The University of British Columbia, Department of Computer Science
Washington University in St. Louis, Department of Computer Science & Engineering
University of Maryland, College Park, Department of Computer Science

2021 **How Do Visual Explanations Foster End Users' Appropriate Trust in Machine Learning?**
University of Massachusetts, Dartmouth

Invited Panels

2022 **IEEE VIS Student Volunteer Mentorship Session** (remote)
IEEE Visualization and Visual Analytics Conference (VIS)

2022 **More is Worse? Avoiding Pitfalls in Reporting a User Study** (in Chinese)
Graphics And Mixed Environment Symposium (GAMES) Webinar Series

Research Experience

2016 – 2021 **Graduate Research Assistant**, Brown Visual Computing, Brown University
Advisor: David H. Laidlaw
Explored perception and scientific thinking in virtual reality (P5, P8, P9)

2018 **Ph.D. Internship**, Visual Analytics Group, Pacific Northwest National Laboratory
Mentor: Dustin L. Arendt
Investigated trust in machine learning and security systems (P4, L2)

2013 – 2016 **Graduate Research Assistant**, Visual Analytics Laboratory, Tufts University
Advisor: Remco Chang
Modeled correlation perception in bivariate visualizations (P1, P2, L1)

2012 **Undergraduate Research Assistant**, Research Center of HCI & VR, Shandong University
Advisor: Zhifang Jiang
Visualized real-time air quality data of Shandong Province