Xiaoying Pu

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Research Interests

Uncertainty visualizations, visual analytics, open science

Experiences

2017- University of Michigan — *Ann Arbor, MI*
Ph.D. Candidate (2020-). Advisor: Matthew Kay, Ph.D.

2020 Microsoft Research — *New York City, NY*
Research Intern. Mentors: Jake Hofman, Ph.D. and Dan Goldstein, Ph.D.

2019 National Renewable Energy Lab — *Golden, CO*
Visualization Intern. Mentor: Kristi Potter, Ph.D.

2016 National Center for Atmospheric Research — *Boulder, CO*
Summer Intern in Parallel Computational Science. Mentor: Rick Brownrigg, Ph.D.

2014 - 2015 Bucknell University — *Lewisburg, PA*
Undergraduate Researcher in Computer Science. Advisor: Evan Peck, Ph.D.
Undergraduate Researcher in Geology. Advisor: Carl Kirby, Ph.D.

Education

2020 M.S. in Computer Science and Engineering
University of Michigan — *Ann Arbor, MI*

2017 B.S. in Computer Science and Engineering
Bucknell University — *Lewisburg, PA*
Summa cum laude. Minor: Mathematics

Grants, Honors & Awards

2020 Best Paper Honorable Mention, ACM CHI Conference on Human Factors in Computing Systems

2014-2017 President's Award for Distinguished Academic Achievement, Bucknell University

2016 GHC Scholar, Anita Borg Institute, $900

2015 Travel Award, Explore Graduate Studies in CSE at University of Michigan, $350

Oral Presentation Award (top 4%), Susquehanna Valley Undergraduate Research Symposium, $100

Honorable Mention, Mathematical Contest in Modeling — COMAP

Bucknell Program for Undergraduate Research, "Improving Computer-Mediated Decision-Making via Physiological Signals from Wearable Sensors", $3000.

2014 Katherine Mabis McKenna Environmental Internship Program, "Feasibility of using freshwater mussels to monitor Ba and Sr contamination due to shale gas flowback water in Pennsylvania streams", $3500 stipend + $600 material.

Publications & Presentations

Conference Proceedings, fully reviewed and archival

Conferences are the main publication venues for computer science research.

2021 **Pu, Xiaoying**, Sean Kross, Jake Hofman, Daniel Goldstein. 2021. Datamations: Animated Explanations of Data Analysis Pipelines. (To appear at CHI 2021)

2020 **Pu, Xiaoying**, Matthew Kay. A Probabilistic Grammar of Graphics. 2020. In *Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems* (CHI 2020). (Best Paper Honorable Mention, top 5%)

Pesé, Mert D., **Xiaoying Pu**, and Kang G. Shin. 2020. SPy: Car Steering Reveals Your Trip Route!. In *Proceedings on Privacy Enhancing Technologies* 2020.2: 155-174.

2018 **Pu, Xiaoying**, and Matthew Kay. The Garden of Forking Paths in Visualization: A Design Space for Reliable Exploratory Visual Analytics: Position Paper. In *2018 IEEE Evaluation and Beyond-Methodological Approaches for Visualization (BELIV)*. IEEE, 2018.

Workshop Papers and Posters, lightly reviewed and non-archival

2019 **Pu, Xiaoying**. 2019. Visual analytics techniques for uncertainty in power systems simulation ensembles. *VIS 2019 Application Spotlight — Visualization Paradigms in the Renewable Energy Space*.

Pu, Xiaoying, Matthew Kay, Michael Correll, Eli Brown. 2019. Unbiasing Visual Data Exploration in the Garden of Forking Paths. *CHI 2019 Workshop on Human-Centered Study of Data Science Work Practices*.

Pu, Xiaoying, Licheng Zhu, Matthew Kay, and Frederick Conrad. 2019. Designing for Preregistration: a User-Centered Perspective. In *CHI Conference on Human Factors in Computing Systems Extended Abstracts (CHI'19 Extended Abstracts), May 4-9, 2019, Glasgow, Scotland UK*. ACM, New York, NY, USA, 6 pages. https://doi.org/10.1145/3290607.3312862

2018 Kay, Matthew, **Xiaoying Pu**, and Frederick Conrad. 2018. Preregistration: Assessing Whether the Pledge Matches the Report. Presentation at the *APA Annual Convention, San Francisco, CA.*

2014 **Pu, Xiaoying** and C.S. Kirby. 2014. Feasibility of using freshwater mussels to monitor Ba and Sr contamination due to shale gas flowback water in Pennsylvania streams. *Geological Society of America Abstracts with Programs, Vol. 46, No. 6, p.315*.

Teaching

Graduate Student Instructor

Teaching discussion sections, designing homework assignments, and hosting office hours.

WN 2021 EECS 203 - Discrete Mathematics

Undergraduate Teaching Assistant

Assisted the instructor and answered student questions in labs.

SP 2016 CSCI 204L - Introduction to Computer Science II lab
CSCI 206L - Computer Organization and Programming lab
FA 2016 CSCI 208L - Programming Languages lab
FA 2014 PHYS 211L - Classical & Modern Physics lab

Teaching Training

SP 2017 UNIV 239 - Working with Writers: Theory and Practice
Training course for working as a consultant at the Writing Center.

Paper Reviews

2020 CHI 2020 Papers, Special Recognitions for Outstanding Reviews
2019 CHI 2019 Late Breaking Work, alt.chi
VIS 2019 InfoVis Papers

Service

Organizations and Events

2020 Earth Day 50 Teach Out, University of Michigan
Performed a nature-themed carillon arrangement
2019-2020 Data Visualization Rackham Interdisciplinary Workshops, University of Michigan
2018 - 2019 Middle school outreach program with GirlsEncoded, University of Michigan
SP 2016 President. Bucknell ACM Women-in-Computing Chapter
2016 First Bucknell Admissions Outreach for promoting diversity

Student Mentoring

2021 Sophia Wang
Undergraduate student at the University of Michigan

2020-2021 Daniel Wang
Undergraduate student at Northwestern University

2019-2020 Qiang Cheng, Statistics
Undergraduate student at the University of Michigan

2018–2019 Dillon Zaugg, Computer Science and Engineering
Undergraduate Research Opportunity Program (UROP) at the University of Michigan