

Melanie Bancilhon

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Research Interests

My research interests are at the intersection of Human-Computer Interaction, Data Visualization and Explainable AI. My thesis work focuses on investigating how visualizations can impact reasoning and decision-making under uncertainty. I leverage interdisciplinary approaches to evaluate decision-making across populations with varying cognitive traits. I am also interested in developing interactive interfaces that facilitate human-AI teaming with the goal of optimizing decision outcomes.

Education

2019 - Present	Washington University in St. Louis Ph.D. in Computer Science <i>Advisor:</i> Dr. Alvitta Ottley
2015 - 2019	Smith College B.A. Computer Science; B.A. Art and Architecture

Publications

CHI '23	Why Combining Text and Visualization Could Improve Bayesian Reasoning: A Cognitive Load Perspective Bancilhon M. , Wright AJ., Sunwoo H., Crouser R J., Ottley A. <i>Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems.</i>
In submission	DocSpect: A Mixed Initiative System to Optimize Reviewing Strategies in Contract Inspection Bancilhon M. , Siu A., Rossi R. and Lipka N.
ICAPS '22	VizXP: A Visualization Framework for Conveying Explanations to Users in Model Reconciliation Problems Kumar A., Vasileiou S., Bancilhon M. , Ottley A. and Yeoh W. <i>In Proceedings of the International Conference on Automated Planning and Scheduling.</i>
PLOS ONE '21	Streetonomics: Quantifying culture using street names. Bancilhon M. , Constantinides M., Bogucka EP., Aiello LM., Quercia D. <i>PLoS ONE 16(6): e0252869</i>

- IEEE VIS '20 Let's Gamble: How a Poor Visualization Can Elicit Risk Behavior.
Bancilhon, M., Liu, Z., Ottley, A.
In 2020 IEEE Visualization Conference (VIS) (pp. 196-200)
- IEEE CG&A '20 Cartographic Design of Cultural Maps.
 Bogucka, E.P., Constantinides, M., Aiello, L.M, Quercia, D., So, W.,
Bancilhon, M.
IEEE Transactions on Computer Graphics and Applications.

Book Chapter

- In Print Improving Evaluation Using Visualization
 Decision-Making Models: A Practical Guide.
Bancilhon, M., Padilla, L., Ottley, A.
Visualization Psychology. Springer Nature.

Peer Reviewed Workshop Papers & Posters

- IEEE TVCG '20 Did You Get The Gist Of It? Understanding How Visualization
 Impacts Decision-Making.
Bancilhon, M., Ottley, A.
IEEE Transactions on Visualization and Computer Graphics.
- IEEE FailFest '20 Expectation Versus Reality: The Failed Evaluation of a
 Mixed-Initiative Visualization System.
 Ha, S., **Bancilhon, M.**, Ottley, A.
IEEE Transactions on Visualization and Computer Graphics.
- IEEE VIS '19 Icons are Best: Ranking Visualizations for Proportion
 Estimation.
 Liu, Z., **Bancilhon, M.**, Ottley, A.
IEEE Information Visualization.

Professional Experience

- Summer '23 **IBM | Research Intern**
AI, Yorktown Heights
Human-AI Collaboration for Microservice Recommendation:
 - Conducted participatory interviews to investigate end user workflows

and shortcomings when using microservice recommendation tools.

- Developed a framework to augment a microservice recommendation algorithm by accounting for user interaction patterns.
- Designed, developed and evaluated an interactive interface rooted in end users' needs that captures user interaction to facilitate human-AI collaboration.

Summer '22

Adobe | Research Intern

Document Intelligence, San Jose

A Mixed Initiative System to Optimize Reviewing Strategies in Contract Inspection:

- Lead formative interviews to investigate the contract reviewing process across different roles and teams.
- Implemented and evaluated an interface that allows users to review AI-generated labels by adopting an impact-oriented approach.

Summer '18

Nokia Bell Labs

Social Dynamics Group, Cambridge UK

- Examined urban historical, cultural and societal patterns encoded in a city's network of street names using data mining techniques.

Teaching Experience

Spring 2022

Visualization Design Studio
Columbia School of Nursing
Guest Lecture

Spring 2021

Predicting Human Decisions
Worcester Polytechnic Institute
Guest Lecture

Fall 2020

Introduction to Visualization
Washington University in St. Louis
Teaching Assistant

Awards & Distinctions

2019 - Present

Sigma Xi Honor Society

2018

Grace Hopper Celebration Scholar

2021

NSF SCH Workshop Smart Health in the AI and COVID Era
Student Awardee

Professional Service

2023	ACM CHI Conference on Human Factors in Computing Systems <i>Reviewer</i>
2023	ACM SIGCHI Conference on Computer-Supported Cooperative Work & Social Computing (CSCW) <i>Reviewer</i>
2022	IEEE Visualization Conference <i>Reviewer</i>
2022	Fourth Workshop on Visualization for Communication (VisComm) <i>Student Committee Member</i>
2021	Fourth Workshop on Visualization for Communication (VisComm) <i>Student Committee Member</i>
2020	IEEE Visualization for Communication (VisComm) <i>Reviewer</i>

Mentorship & University Service

2020 - 2023	Department of Computer Science & Engineering, Washington University in St. Louis <i>Graduate Student Senate Representative</i>
2021 - 2023	WashU First Gen Program <i>Mentor</i>