# ESHTA BHARDWAJ

**Email** · **LinkedIn** · **Personal Website** · **Google Scholar**

Researcher and PhD Candidate studying data practices in machine learning from a data curation lens. Research interests include examining concerns of fairness, accountability, and transparency in ML dataset development, developing methods to promote reflexivity in data work, and designing data curation interventions for ML.

## EDUCATION

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| **PhD** | University of Toronto, Information<br>Supervisor: Christoph Becker | Sep 2022 – Present |
| **MA** | York University, Information Systems and Technology<br>Thesis: "Data Analytics in Climate Change Studies"<br>Supervisor: Peter Khaiter | May 2022 |
| **BA** | York University, Information Technology<br>Specialized Honours | May 2020 |

## HONORS AND AWARDS

**Ontario Graduate Scholarship** 2025 – 2026
- Merit-based provincial award granted on the basis of academic experience and achievements as well as clarity and significance of submitted research proposal.
- Amount awarded: $15,000.

**Faculty of Information Excellence Award** 2025 – 2026
- Merit-based award granted in recognition of achieving an external, competitive award.
- Amount awarded: $5000.

**Women in Machine Learning (WiML) Travel Award** 2024
- Competitive travel award to attend and present at the Women in Machine Learning workshop.
- Amount awarded: $700.

**NeurIPS 2024 Scholar Award** 2024
- Competitive travel award to attend and present at the Conference on Neural Information Processing Systems, a leading global venue for AI/ML research.
- Amount awarded: $2400.

**SGS PhD Research and Conference Travel Award** 2024
- Travel award to attend and present at Conference on Fairness, Accountability, and Transparency.
- Amount awarded: $3000.

**CapaCITY/É Summer Institute** 2024
- Competitive travel award to attend the CapaCITY/É project's first training institute on implementation science for sustainability initiatives through interdisciplinary collaboration.
- Amount awarded: $900.

**WDS-ITO Student Travel Award for Research Data Alliance Plenary** 2023
- Competitive travel award granted to attend the Research Data Alliance 20th Plenary Meeting to learn research data management (RDM) practices and infrastructure, interoperability, and data stewardship and advance its usage within ML research.
- Amount awarded: $5000.

**Digital Curation Institute (DCI) Fellowship** 2022 – 2023
- The DCI Fellowship offers students and researchers the ability to lead research at the intersection of sustainability, computing and technology, and curation activities. As part of the DCI, I have been part of establishing a baseline platform for data curation and modelling for Curbcut Toronto.
- Amount awarded: $5000.

## PEER REVIEWED PUBLICATIONS

### *Conference Proceedings (full-text)*[1]

1. Guliyeva, N., **Bhardwaj, E.**, & Becker, C. Exploring the Viability of the Updated World3 Model for Examining the Impact of Computing on Planetary Boundaries. (2025). In Proceedings of the 2025 Workshop on Computing within Limits (**LIMITS**). URL.
2. **Bhardwaj, E.**, Gujral, H., Wu, S., Zogheib, C., Maharaj, T., & Becker, C. (2024). The State of Data Curation at NeurIPS: An Assessment of Dataset Development Practices in the Datasets and Benchmarks Track. In Advances in Neural Information Processing Systems Datasets and Benchmarks Track (**Spotlight at NeurIPS**). DOI.
3. **Bhardwaj, E.**, Qiao, H., & Becker, C. (2024). Limits at a Distance: Design Directions to Address Psychological Distance in Policy Decisions Affecting Planetary Boundaries. In Proceedings of the 2024 Workshop on Computing within Limits (**LIMITS**). DOI.
4. **Bhardwaj, E.**, Gujral, H., Wu, S., Zogheib, C., Maharaj, T., & Becker, C. (2024). Machine learning data practices through a data curation lens: An evaluation framework. In The 2024 ACM Conference on Fairness, Accountability, and Transparency (**FAccT**), 1055-1067. DOI.
5. **Bhardwaj, E.***, Qiao, H.*, & Becker, C. (2023). Pathways to urban sustainability: Design perspectives on a data curation and visualization platform. In Proceedings of the 2023 Workshop on Computing within Limits (**LIMITS**). DOI. (*equal contribution)

### *Journal Articles*

1. **Bhardwaj, E.**, & Khaiter, P. (2023). Is the climate getting WARMer? A framework and tool for climate data comparison. Environmental Modelling & Software, 171, Article 105879. DOI.
2. **Bhardwaj, E.**, & Khaiter, P. (2022). What data analytics can or cannot do for climate change studies: An inventory of interactive visual tools. Ecological Informatics, Article 101918. DOI.

## PEER REVIEWED WORKSHOPS

### *Organizer*

1. **Bhardwaj, E.** & Becker, C. (2025). Leveraging humour, satire, and art to engage with the environmental impacts of AI. ACM Conference on Fairness, Accountability, and Transparency (**FAccT**), CRAFT Workshop.
2. **Bhardwaj, E.**, Qiao, H., Munson, R., & Becker, C. (2025). Humour as Resistance: Creative Approaches to Data Center Accountability. ACM SIGCAS/SIGCHI Conference on Computing and Sustainable Societies (**COMPASS**) Workshop.
3. Qiao, H., **Bhardwaj, E.**, Landau, V., Bonfils, N., Iqbal, M., Jaworsky, O., Munson, R., Rubisova, L., Smith, N., Thapa, A., & Becker, C. (2025). Are You Thirsty? So is Your AI. ACM SIGCAS/SIGCHI Conference on Computing and Sustainable Societies (**COMPASS**) Arts & Demos.

### *Short-length Submissions in Conference Proceedings*

1. **Bhardwaj, E.**, Qiao, H., Munson, R., & Becker, C. (2025). Humour as Resistance: Creative Approaches to Data Center Accountability. ACM SIGCAS/SIGCHI Conference on Computing and Sustainable Societies (**COMPASS**) Workshop. DOI.
2. Qiao, H., **Bhardwaj, E.**, Landau, V., Bonfils, N., Iqbal, M., Jaworsky, O., Munson, R., Rubisova, L., Smith, N., Thapa, A., & Becker, C. (2025). Are You Thirsty? So is Your AI. ACM SIGCAS/SIGCHI Conference on Computing and Sustainable Societies (**COMPASS**) Arts & Demos. DOI.

[1] Full-text articles in peer reviewed conference proceedings are considered equivalent contributions to journal articles in Computer Science and computing-adjacent disciplines.

***Abstract Submissions***

1. Qiao, H., **Bhardwaj, E.**, Landau, V., Bonfils, N., Iqbal, M., Jaworsky, O., Munson, R., Rubisova, L., Smith, N., Thapa, A., & Becker, C. (2025). Are You Thirsty? So is Your AI. Responsible AI Day at the ACM SIGKDD Conference on Knowledge Discovery and Data Mining (**KDD)**.
2. **Bhardwaj, E.** & Becker, C. (2025). Leveraging humour, satire, and art to engage with the environmental impacts of AI. ACM Conference on Fairness, Accountability, and Transparency (**FAccT**), CRAFT Workshop.
3. **Bhardwaj, E.** & Becker, C. (2024). Supporting Responsible Machine Learning by Improving Data Curation. 19th Women in Machine Learning Workshop (WiML) at **NeurIPS**.
4. **Bhardwaj, E.** & Qiao, H. (2024). Pathways to urban sustainability: Design perspectives on a Toronto-based data curation and visualization platform. Ontario Climate Risk Workshop (**OCRW**) at the Beatrice and Arthur Minden Symposium on the Environment.
5. **Bhardwaj, E.** (2023). Data Practices in Decision-Making for Environmental Sustainability. Computer-Supported Cooperative Work (**CSCW**) workshop on Data-Enabled Sustainability.
6. **Bhardwaj, E.** (2023). Data Curation for Community Empowerment in ML Research. Computer-Supported Cooperative Work (**CSCW**) workshop on Community-Driven AI.
7. **Bhardwaj, E.** & Khaiter, P. (2022). Visualization tools for climate data analytics. In 2022 International Congress on Environmental Modelling and Software and Science Based Decision Making (**iEMSs**).
8. **Bhardwaj, E.** & Khaiter, P. (2021). Data Analytics Approach to Climate Change Studies. In 2021 International Congress on Modelling and Simulation (**MODSIM**).

## PRESENTATIONS

***Presentations that Accompany Full-text Articles in Peer Reviewed Proceedings***

1. **Bhardwaj, E.**, Gujral, H., Wu, S., Zogheib, C., Maharaj, T., & Becker, C. (2024). The State of Data Curation at NeurIPS: An Assessment of Dataset Development Practices in the Datasets and Benchmarks Track. In Advances in Neural Information Processing Systems Datasets and Benchmarks Track **(Spotlight Poster - NeurIPS D&B)**. Recorded talk[2]. Poster.
2. **Bhardwaj, E.**, Qiao, H., & Becker, C. (2024). Limits at a Distance: Design Directions to Address Psychological Distance in Policy Decisions Affecting Planetary Boundaries. In Proceedings of the 2024 Workshop on Computing within Limits (**LIMITS**). Recorded talk.
3. **Bhardwaj, E.**, Gujral, H., Wu, S., Zogheib, C., Maharaj, T., & Becker, C. (2024). Machine learning data practices through a data curation lens: An evaluation framework. In The 2024 ACM Conference on Fairness, Accountability, and Transparency (**FAccT**), 1055-1067. Recorded talk.
4. **Bhardwaj, E.***, Qiao, H.*, & Becker, C. (2023). Pathways to urban sustainability: Design perspectives on a data curation and visualization platform. In Proceedings of the 2023 Workshop on Computing within Limits (**LIMITS**). (*equal contribution)

***Presentations that Accompany Peer Reviewed Short-length Submissions***

1. **Bhardwaj, E.** & Becker, C. (2024). Supporting Responsible Machine Learning by Improving Data Curation. 19th Women in Machine Learning Workshop (WiML) at **NeurIPS**. Poster.
2. **Bhardwaj, E.** & Qiao, H. (2024). Pathways to urban sustainability: Design perspectives on a Toronto-based data curation and visualization platform. Ontario Climate Risk Workshop (**OCRW**) at the Beatrice and Arthur Minden Symposium on the Environment. Poster.
3. **Bhardwaj, E.** & Khaiter, P. (2022). Visualization tools for climate data analytics. In 2022 International Congress on Environmental Modelling and Software and Science Based Decision Making (**iEMSs**). Recorded talk.
4. **Bhardwaj, E.** & Khaiter, P. (2021). Data Analytics Approach to Climate Change Studies. In 2021 International Congress on Modelling and Simulation (**MODSIM**). Recorded talk.

[2] All recorded talks are made available online to accompany the synchronous oral talk performed at the event.

## OTHER SERVICE & MISC.

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| Affiliate, Toronto Climate Observatory | 2023 – Present |
| Member, FAIR for Machine Learning (FAIR4ML) IG | 2023 – Present |
| Member, Just Sustainability Design Lab | 2022 – Present |
| Reviewer, Women in Machine Learning Workshop (WiML) at NeurIPS | 2024, 2025 |
| Reviewer, Journal of Environmental Modelling & Software | 2024 |
| Reviewer, International Conference on ICT for Sustainability | 2023 |

## RESEARCH EXPERIENCE

**Thesis**, York University 2022

- Successfully defended master's thesis on data analytics in climate change studies with a focus on developing a data analysis framework and visualization tool for climatic analysis on a regional scale to compare climate models with the corresponding observed values. Nominated for the annual Thesis Prize.

## TEACHING EXPERIENCE

**University of Toronto**

**Course Instructor: Data Visualization,** Data Science Certificate for Doctoral Students 2025

**Teaching Assistant,** Faculty of Information Jan 2023 – Present

- INF1003: Information Systems, Service and Design (graduate)
- INF1339: Introduction to Computational Thinking (graduate)
- INF1342: System Requirements and Architectural Design (graduate)
- INF2040: Project Management (graduate)
- INF2169: User-Centered Information Systems Development (graduate)

**York University** Sep 2020 – Apr 2022

**Teaching Assistant,** Information Technology

- ITEC 1000: Introduction to Information Technologies (undergraduate)
- ITEC 1010: Information and Organizations (undergraduate)