

# Shera Potka

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<https://github.com/sherapotka>

## Professional Summary

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Results-driven data scientist with expertise in Data Mining, Machine Learning, and Data Analysis. Proven experience teaching and mentoring in advanced data science courses. Published researcher with several papers on large-scale data analysis. Committed to delivering practical, data-driven solutions to real-world challenges.

## Core Competences

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- Expertise in Data Mining, Machine Learning, and large-scale Data Analysis
- Strong teaching and mentoring abilities in advanced data-analytics methods
- Proven ability to conduct and publish high-impact research
- Skilled in applying data-driven approaches to solve complex problems

## Education

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- **PhD in Computer Science**, University of Victoria (May 2023 – present; **courses, candidacy completed**)
- **Master's in Media and Computer Science**, University of Cologne (August 2021 – April 2023)
- **Bachelor's in Media and Computer Science**, University of Cologne (June 2019 – August 2021)
- **Relevant Courses Completed:** CSC 503 - Data Mining (A+), CSC 502 - Systems for Massive Datasets (A+), CSC 582 - Data Privacy (A+), CHSC 7400 – Foundations of Disease Analytics (A)

## Experience

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**Instructor**, Data Models and Algorithms, University of Victoria Jan 2025 – Apr 2025

- Delivering interactive weekly lectures with dynamic teaching methods and opportunities for active student participation.
- Creating and enhancing lecture materials, including up-to-date and cutting-edge content such as slides, detailed notes, and supplementary resources to support effective teaching and student learning.
- Assisting and mentoring students in applying data models and algorithms to their course projects.

**Teaching Assistant**, Data Mining, University of Victoria Fall 2024 – Present

- Assisting in mentoring and supporting 180 students in Data Mining during Fall 2024
- Designing and conducting lab sessions, helping students apply data mining techniques in practical projects

**Teaching Assistant**, Data Mining, University of Victoria Summer 2024

- Assisted in mentoring and supporting 50 graduate students in Data Mining during Summer 2024
- Designed and conducted lab sessions, helping students apply data mining techniques in practical projects

**Teaching Assistant**, Data Mining, University of Victoria Spring 2024

- Assisted in mentoring and supporting 150 students in Data Mining during Spring 2024
- Designed and conducted lab sessions, helping students apply data mining techniques in practical projects

**Teaching Assistant**, Web Design, University of Victoria Spring 2024

- Guided 120 students through web design principles, including HTML, CSS, and JavaScript
- Provided feedback on project work and mentored students in creating functional websites

**Software Developer**, CCEH, University of Cologne, Germany Nov 2022 – Nov 2023

- Developed software solutions for cross-disciplinary research projects
- Provided administrative support for the Project RACIR, contributing to higher education research
- Collaborated with academic teams on research and administrative tasks

- **Link:** CCEH/SheraPotka

**ETCL - Digital Scholarship**, University of Victoria

Oct 2022 – Mar 2023

- Managed social media and WordPress visualization for academic projects
- Coordinated communication with academic partners and supported cross-disciplinary research
- Developed presentations, abstracts, and concepts related to higher education
- Led project management for HSS Commons and website content creation
- **Link:** ETCL/Shera Potka

**Web Designer**, Junger Anleger, Cologne, Germany

Mar 2021 – Sep 2022

- Developed websites using WordPress and managed social media communications
- Created digital content and assisted with event planning and organization
- **Links:** Junger-Anleger.de, Mitglieder.Junger-Anleger.de

## Publications

**Community Structure and Coherence in Digital Humanities Works**

IISA 2023

(*Best Paper Award*)

**Shera Potka**, Alex Thomo

IISA 2023 (14th International Conference on Information, Intelligence, Systems & Applications): 1-8

**TLDR:** Analyzed a decade of Digital Humanities publications, revealing community structure and cohesion using text similarity networks.

**Enhancing Structural Minority Visibility in Link Recommendations**

MEDES 2024

(*Best Paper Award*)

**Shera Potka**, Isla Li, Jason Kepler, Alex Thomo

MEDES 2024 (16th International Conference on Management of Digital EcoSystems)

**TLDR:** Introduced MinWalk, an algorithm to improve visibility of minority groups in social networks, balancing fairness and reducing popularity bias.

**Word Embedding Bias in Large Language Models**

I-SPAN 2025

Poomrapee Chuthamsatid, **Shera Potka**, Alex Thomo

I-SPAN 2025 (17th International Symposium on Pervasive Systems, Algorithms, and Networks)

**TLDR:** Examined gender and race bias in modern large language models, expanding beyond previous research with new insights using SC-WEAT tests and clustering techniques.

**Gender and Race Bias in Consumer Product Recommendations by Large Language Models**

AINA-2025

Ke Xu, **Shera Potka**, Alex Thomo

AINA-2025 (39th International Conference on Advanced Information Networking and Applications)

**TLDR:** Investigated biases in consumer product recommendations, focusing on gender and race bias. Analyzed implications for fairness and diversity in AI-driven recommendation systems.

**CluSanT: Differentially Private and Semantically Coherent Text Sanitization**

NAACL 2025

Ahmed Musa Awon, Yun Lu, **Shera Potka**, Alex Thomo

NAACL 2025 (Annual Conference of the Nations of the Americas Chapter of the Association for Computational Linguistics)

**TLDR:** Introduced CluSanT, a novel framework for text sanitization using Metric Local Differential Privacy (MLDP), balancing privacy and semantic coherence through clustering and embedding techniques.

## Technologies

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**Languages:** Java, Objective-C, C#, C, C++ , SQL, JavaScript, HTML, Python, PHP

**Technologies:** .NET, Postgres, MySQL, React, WordPress, Elementor Pro, Node.js, Protégé

## References

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**Prof.** Alex Thomo, University of Victoria, Computer Science, BC, Canada, thomo@uvic.ca

**Prof.** Venkatesh Srinivasan, Santa Clara University, Mathematics and Computer Science, CA, USA, vsrinivasan4@scu.edu

**Prof.** Yun Lu, University of Victoria, Computer Science, BC, Canada, yunlu@uvic.ca