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About Me

I'm passionate about using AI to empower marginalized communities and address real-world challenges. As a PhD candidate at University of British Columbia (UBC) animal welfare program, lecturer at UBC Master of Data Science Program, and collaborator at TrustML, I conduct interdisciplinary research bridging **AI bias**, **data science**, and **animal welfare science**. My previous research includes automated dairy cow behavior and disease monitoring. Currently, I explore biases and tranparency issues in generative AI. I believe it's crucial that we don't lose the voices of those not in power and making them invisible behind numeric machines through coded gaze. I strive to make my research fully reproducible and accessible to all.

Selected Publications

Note: Full list of publications available here, and oral presentations available here

2025 **The erasure of intensive livestock farming in text-to-image generative AI**
Sheng, K., Tuyttens, F.A.M., von Keyserlingk, M.A.G.
ACM Conference on Fairness, Accountability, and Transparency (ACM FAccT), oral presentation. https://doi.org/10.48550/arXiv.2502.19771
Note: This work was also presented as poster + lightning talk at Vancouver Vision & Learning Workshop ICML 2025

2025 **Redefining Lameness Assessment: Constructing Lameness Hierarchy using Crowd-Sourced Data**
Sheng, K., Foris, B., von Keyserlingk, M.A.G., Timbers, T.A., Cabrera, V., Weary, D.M.
Computers and Electronics in Agriculture. https://doi.org/10.1016/j.compag.2025.110206

2024 **Redefining dominance calculation: Increased competition flattens the dominance hierarchy in dairy cows**
Sheng, K., Foris, B., Krahn, J., Weary, D.M., von Keyserlingk, M.A.G.
Journal of Dairy Science, 107(9): 7286-7298. https://doi.org/10.3168/jds.2023-24587

2023 **Crowd sourcing remote comparative lameness assessments for dairy cattle**
Sheng, K., Foris, B., von Keyserlingk, M.A.G., Gardenier, J., Clark, C., Weary, D.M.
Journal of Dairy Science, 106(8): 5715-5722. https://doi.org/10.3168/jds.2022-22737

2025   **AI for One Welfare: the role of animal welfare scientists in developing valid and ethical AI-based welfare assessment tools**
Foris, B., **Sheng, K.**, Dürnberger, C., Oczak, M., Rault, J.L.
Frontiers in Veterinary Science, 12. https://doi.org/10.3389/fvets.2025.1645901

2024   **Automated, longitudinal measures of drinking behavior provide insights into the social hierarchy in dairy cows**
Foris, B., Vandresen, B., **Sheng, K.**, Krahn, J., Weary, D.M., von Keyserlingk, M.A.G.
JDS Communications, 5(5): 411-415. https://doi.org/10.3168/jdsc.2023-0487

2024   **Effects of group size on agonistic interactions in dairy cows: a descriptive study**
Krahn, J., Foris, B., **Sheng, K.**, Weary, D.M., von Keyserlingk, M.A.G.
Animal, 18(3): 101083. https://doi.org/10.1016/j.animal.2024.101083

Selected Research Funding & Awards

Total research funding secured: $74,975 CAD. Total scholarship awarded: $45,756 CAD

Full research funding and awards available here

2025   ACM Conference on Fairness, Accountability, and Transparency (FAccT) Travel Grant ($1308.2 USD)

2022   EAAP Early Career Researcher Award – **First Place** in Oral Presentation

2021 – 2025   Pei-Huang Tung and Tan-Wen Tung Graduate Fellowship (Total: $19,550 CAD)

Selected Teaching Experience

Full teaching experience available here

Fall 2025   **Lecturer, UBC Master of Data Science Program**
Teaching two graduate courses: DSCI 522: Reproducible and Trustworthy Data Science Workflows and DSCI 571: Supervised Machine Learning. Designed and taught workshops including AI Tools Playground: Responsible Use of Generative AI, Linux Command Using Cloud Computing.

Summer 2025   **Instructor & Mentor, Data Science Summer Camps at VISST & UBC**
Designed and taught Data Science for Kids Summer Camp covering AI-assisted programming, statistical inference, data visualization, K-nearest neighbor, and AI ethics. Also mentored participants in Data Science for Girls Summer Camp.

Fall 2024 – Spring 2025   **Teaching Assistant, UBC Master of Data Science Program**
Supported five graduate courses (116 students each): DSCI 525 (Web and Cloud Computing), DSCI 553 (Statistical Inference and Computation II), DSCI 524 (Collaborative Software Development), DSCI 522 (Data Science Workflows), and DSCI 552 (Statistical Inference and Computation I).

2022/4 – 2024/8	**Instructor, Machine Learning and AI Summer Camp at VISST** Taught high school students (11-16 years old) an introduction to machine learning, covering decision trees, computer vision, natural language processing, reinforcement learning, generative AI and AI ethics.

Selected Leadership, Community and Volunteer Activities

2021/1 – present	**Student Mentor and Supervisor, UBC** Mentored 26 undergraduate and graduate students in data science, statistics, computer science, biology, and applied animal biology during PhD studies. Supervised research projects ranging from computer vision and machine learning applications to statistical modeling and R package development.
2024/1	**External Reviewer, Dutch Research Council (NWO)** Assessed research funding application for the Dutch Research Council, with a focus on projects related to computer science and neuroscience.
2021/12 – 2023/5	**Organizer and Coordinator, UBC Animal Welfare Program 25th Anniversary Webinar Series Celebration** Planned a webinar series to celebrate UBC Animal Welfare Program's 25th Anniversary. Invited alumni to give presentations showcasing their impact on the animal welfare field.
2019/3 – 2020/3	**Student Leader and Ambassador, Agriculture Future of America** Built a bridge for undergraduate students to connect with industry professionals through strategic networking, leadership development, and career-building initiatives. Represented Agriculture Future of America at various conferences (e.g., Alltech One 19) to negotiate funding and network with industry professionals.
2017/12	**Organizer and Speaker Introducer, TED x UW-Madison** Organized and hosted TEDx UW-Madison with club members, introduced speakers, and worked as an event photographer.

Education

2020/9 – Present	**University of British Columbia** – Vancouver, BC, Canada *PhD in Applied Animal Biology X Data Science* *Research Collaborator at TrustML* *Average: 91%*
2017/9 – 2020/5	**University of Wisconsin - Madison** – Madison, WI, USA *Bachelor of Science in Animal Science, minor in Computer Science* *GPA: 3.97/4.0* Honors: Dean's List (2017-2020), Distinctive Scholastic Achievement