

# Joseph Wonsil

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PhD candidate of computer science interested in teaching, interdisciplinary research, and computational reproducibility.

## Education

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- **PhD** **Vancouver, BC**  
2021–Present  
*The University of British Columbia,*  
Computer Science
- **Master's of Science** **Vancouver, BC**  
2019–2021  
*The University of British Columbia,*  
Computer Science
- **Bachelor of Arts** **Kenosha, WI**  
2015–2019  
*Carthage College,*  
Majoring in Computer Science, Environmental Science, Geospatial Science (GIS)

## Teaching Experience

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- **Adjunct Faculty** **Madonna University**  
Sep 2024 – Present  
*Introduction to Geographic Information Systems*
  - Taught a remote, asynchronous GIS class as instructor of record.
  - Employed various strategies to keep students engaged with the online content, including discussion postings, weekly reflections, and having student-chosen project topics.
- **Teaching Assistant** **University of British Columbia**  
Jan 2025 – Present  
*Computer Science*
  - Assisted professors with in-class active learning exercises.
  - Held office hours for homework and course-related questions.
  - Experienced large classes ( $\approx 500$  students, sections of  $\approx 150$ ), including in-person activities and remote, asynchronous Q/A.Classes I was a TA for:
  - Introduction to Systematic Program Design (CPSC 103)
  - Discrete Mathematics for Data Science (DSCI 220)
- **Tutor** **Carthage College**  
Feb 2016– May 2019  
*Geospatial Science and Computer Science*
  - Assisted professors with teaching course material in-class.
  - Held one-on-one sessions for students making up a missed class or requested clarification on in-class material.
  - Held drop-in hours for homework and course-related questions.Classes I tutored for:
  - Intro GIS and Advanced GIS
  - Computer Science I and II

## Internships and Research Experiences

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- **Maestro Large-Scale Data Processing** **Oracle Labs Machine Learning Research Group**  
May 2023– August 2023  
*Provenance for a Large-scale Data Processing Pipeline*
  - Internship project working on extending Maestro, a large-scale data processing pipeline.
  - Integrated a provenance collection system into Maestro which can help identify where data originated, which transformations have been applied to it, and which execution of the pipeline is responsible for generating it.
- **Tribuo ML Library Reproducibility Framework** **UBC Collaboration with Oracle Labs**  
June 2021– October 2021  
*Contributing a reproducibility framework to the open-source Tribuo library*

- Built a framework to automatically recreate a pipeline capable of re-training an identical Tribuo model.
- Implemented a provenance diff tool to compare Tribuo provenance objects to help validate reproducibility.
- Published at [ACM REP 2023](#)
- **NSF Funded REU in Data Provenance** **Harvard University**  
*Using Provenance to Make a Better Debugger* *May 2018–Aug 2018*
  - Worked closely with a research partner to create a provenance parser and post-mortem debugger for the R language.
  - Used provenance to reconstruct past executions of scripts, reveal connections between variables, and type checking.
  - Published in [The R Journal](#)
- **Spatio-Temporal Analysis of Blood Cancer in the US** **Carthage College**  
*Geospatial Public Health Research* *Jan 2018–Apr 2018*
  - Analyzed blood cancer data to find patterns, hot spots, and possible correlations in occurrences in the US over the course of forty years.
  - Taught myself the Python scripting language to automate analyses using a geographic information system.
  - Poster presentation at American Association of Geographers Annual Meeting 2018.
- **CaNOP CubeSat** **Wisconsin Space Grant Consortium**  
*Multispectral imaging nanosatellite* *May 2016–May 2019*
  - As Command and Data Handling Team Leader, worked with a team of diverse technical backgrounds to integrate various satellite components.
  - Wrote, submitted, and presented design documentation to NASA for project advancement.
  - Poster Presentation at American Society for Gravitational and Space Research 2017.
  - Poster Presentation at CubeSat Developers Workshop 2018.

## Service and Leadership

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- President of Computer Science Graduate Student Association, The University of British Columbia
- VP Social of Computer Science Graduate Student Association, The University of British Columbia
- UnDistinguished Lecture Series Co-Organizer, Computer Science Graduate Student Association, The University of British Columbia
- Weekly Tea Organizer, Computer Science Graduate Student Association, The University of British Columbia
- Social Chair of Systopia Lab, The University of British Columbia
- Documentation Chair of Systopia Lab, The University of British Columbia
- Gold Leadership Award, Carthage College
- Geography Department Service Fellowship, Carthage College
- Computer Science Department Service Fellowship, Carthage College

## Publications

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- **Joseph Wonsil**, Rúbia Guerra, Adam Pocock, Jack Sullivan and Margo Seltzer, *Raising the Reproducibility Bar*. In the proceedings of Proceedings of the 2025 ACM Conference on Reproducibility and Replicability, 2025
- Adam Craig Pocock, **Joseph Wonsil**, Romina Mahinpei, Jack Sullivan, Margo Seltzer, *Provenance Design and Evolution in a Production ML Library*. In Championing Open-source Development in ML Workshop@ ICML25
- Boufford, N., **Wonsil, J.**, Pocock, A., Sullivan, J., Seltzer, M., & Pasquier, T. (2024). *Computational Experiment Comprehension using Provenance Summarization*. Proceedings of the 2024 ACM Conference on Reproducibility and Replicability.
- **Wonsil, J.**, Sullivan, J., Seltzer, M., & Pocock, A. (2023). *Integrated Reproducibility with Self-describing Machine Learning Models*. Proceedings of the 2023 ACM Conference on Reproducibility and Replicability, 1–14. <https://doi.org/10.1145/3589806.3600039>
- **Wonsil, J.**, Boufford, N., Agrawal, P., Chen, C., Cui, T., Sivaram, A., & Seltzer, M. (2023). *Reproducibility as a service*. *Software: Practice and Experience*, 53(7), 1543–1571. <https://doi.org/10.1002/spe.3202>
- Lerner, B., Boose, E., Brand, O., Ellison, A. M., Fong, E., Lau, M., Ngo, K., Pasquier, T., Perez, L. A., Seltzer, M., Sheehan, R., & **Wonsil, J.** (2023). *Making Provenance Work for You*. *The R Journal*, 14(4), 141–159. <https://doi.org/10.32614/RJ-2023-003>

## Presentations and Posters

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- *Poster*: **Joseph Wonsil**, Nichole Boufford, and Margo Seltzer, *Experience with Reproducibility and Consistency in Writing an Academic Paper*. In the proceedings of Proceedings of the 2025 ACM Conference on Reproducibility and Replicability, 2025.
- *Presentation*: **Wonsil, J.** (2023). *Provenance in a Large-scale Data Processing Pipeline*. Oracle Intern Presentations.
- *Poster*: **Wonsil, J.**, Sullivan, J., Seltzer, M., & Pocock, A. (2023). *Integrated Reproducibility with Self-describing Machine Learning Models*. SALmon 2023 Workshop.
- *Presentation*: **Wonsil, J.**, Sullivan, J., Seltzer, M., & Pocock, A. (2023). *Integrated Reproducibility with Self-describing Machine Learning Models*. ACM Conference on Reproducibility and Replicability 2023.
- *Poster*: **Wonsil, J.** & Sun, W. (2019). *A Spatio-Temporal Visualization and Clustering Analysis of Leukemia and Lymphoma in the United States*. American Association of Geographers Annual Meeting 2019.
- *Presentation*: **Wonsil, J.** (2018). *Using Provenance to Make a Better Debugger*. Harvard Forest Summer Student Symposium 2018.
- *Poster*: **Wonsil, J.** & Sun, W. (2018). *A Spatio-Temporal Analysis of Leukemia and Lymphoma in the United States*. American Association of Geographers Annual Meeting 2018.
- *Poster*: Crosby, K., Gallagher, C., Munson, J., & **Wonsil, J.** (2018). *Canopy Near-Infrared Observing Project*. 15th Annual CubeSat Developers Workshop.
- *Poster*: Ananda, C., Baluch, S., Barnes, J., Bartel, N., Becher, M., Bisciglia, M., Dziubinski, K., Erickson, Z., Gallagher, C., Gerloff, D., Kitchen, C., Hernandez, M., Huff, M., Larson, J., Munson, J., Shannon, T., Weber, A., Wenner, N., & **Wonsil, J.** (2017) *Canopy Near-Infrared Observing Project*. Annual Meeting of the American Society for Gravitational and Space Research.