

# Lakin Wecker

Calgary, A.B.

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## About

I am an experienced software engineer and a Ph.D. candidate with two decades of success building robust, high-performance systems. I thrive on tackling complex challenges and crafting elegant, scalable solutions using statically typed, safe-by-default, high-performance languages. I am proficient in a diverse range of languages and technologies, with particular expertise in distributed systems and geospatial data structures and algorithms. I am passionate about continuous learning and sharing knowledge with others. Let's connect and explore opportunities!

## Skills

Innovator	Geospatial Data Structures · Geospatial Algorithms Design · Scientific Research
Expert	C++ · Eigen3 · Linear Algebra · Python · Django · SQL · Linux (Ubuntu/Debian) · Git · TDD · API Design · Computer Graphics · Numerical Optimization · Data Structures · Algorithms · Leadership · Mentorship · Coaching · Teaching
Proficient	Rust · Tokio · Axum · Scala · Go · Typescript · Javascript · Redis · nats.io · Docker · Podman · Ansible · Postgres · DuckDB · Networking · Domain Driven Design · Functional Programming
Competent	Elm · Gleam · F# · Haskell · CSS · React · AWS · Azure · Digital Ocean · fly.io · Scrum · Agile · MySQL · MongoDB

## Industry

2024-Present	CTO & Cofounder, BigGeo, Calgary AB
2022-2024	Principle Scientist, BigGeo, Calgary AB
2008-Present	Owner, Director and Software Developer, Structured Abstraction, Calgary AB
2007-2008	Senior Software Developer, Etsy Inc, Brooklyn, NY
2006-2007	Senior Software Developer, Evolvs Media Inc, Calgary, AB
2004	Lead Programmer, iStockPhoto, Calgary, AB

## Volunteerism

- 2023-Present Advisor, [Lichess](#)
- 2021-2023 Treasurer, [Lichess](#)
- 2016-Present Volunteer, [Sled Island](#)
- 2012-Present Volunteer, [Calgary Underground Film Festival](#)

## Education

### DEGREES

- 2025\* PH.D in Computer Science, University of Calgary (expected)
- 2020 PH.D CANDIDATE in Computer Science, University of Calgary
- 2007 M.Sc in Computer Science, University of Calgary
- 2004 B.Sc in Computer Science, University of Calgary

### TEACHING

- 2021-2023 TEACHER for “Composable Software Construction”, Vivid Theory
- 2020 TEACHING ASSISTANT for “Introduction to Computer Graphics” (CPSC 453), University of Calgary

## Grants, honors & awards

- 2018 NSERC Scholarship
- 2017 Queen Elizabeth Scholarship
- 2007 Twice recipient of a Departmental Research Award Dean’s List

## Publications, talks & research

### RESEARCH

- 2018-2024 Research Assistant supervised by Dr. Samavati

### THESIS

- 2007 **Wecker, L.** “Synthesizing Techniques based on Multiresolution” *M.Sc Thesis*, University of Calgary

## JOURNAL ARTICLES

- 2023 Layton, J., **Wecker, L.**, Runions, A., Samavati, F. F. “[CLOUD SHADOW DETECTION VIA RAY CASTING WITH PROBABILITY ANALYSIS REFINEMENT USING SENTINEL-2 SATELLITE DATA](#)” *Remote Sensing MDPI* (2023)
- 2023 Bash, E. A., **Wecker, L.**, Rahman, M. M., Dow, C. F., McDermid, G., Samavati, F. F., Whitehead, K., Moorman, B. J., Medrzycka, D., Copland, L. “[A MULTI-RESOLUTION APPROACH TO POINT CLOUD REGISTRATION WITHOUT CONTROL POINTS](#)” *Remote Sensing MDPI* (2023)
- 2022 Kazemi, M., **Wecker, L.**, Samavati, F. F. “[EFFICIENT CALCULATION OF DISTANCE TRANSFORM ON DISCRETE GLOBAL GRID SYSTEMS](#)” *ISPRS International Journal of Geo-Information MDPI* (2022)
- 2022 MacTavish, M., **Wecker, L.**, and Samavati, F. F. “[PERSPECTIVE CHARTS IN A MULTI-FOCI GLOBE-BASED VISUALIZATION OF COVID-19 DATA](#)”. *ISPRS International Journal of Geo-Information MDPI* (2022)
- 2020 Hall, J., **Wecker, L.**, Ulmer, B. and Samavati, F. F. “[DISDYAKIS TRIACONTAHEDRON DGGS](#)” *ISPRS Int. J. Geo-Inf.* MDPI (2020)
- 2010 **Wecker, L.**, Samavati, F. F. and Gavrilova, M. “[A MULTIREOLUTION APPROACH TO IRIS SYNTHESIS](#)” *Computers & Graphics*, Elsevier, Ltd. (2010)
- 2007 **Wecker, L.**, Samavati, F. F. and Gavrilova, M. “[CONTEXTUAL VOID PATCHING FOR DIGITAL ELEVATION MODELS](#)” *The Visual Computer*, Springer-Verlag (2007)

## CONFERENCES

- 2021 Bash, E.A., **Wecker, L.**, Rahaman, M.M., Dow, C., McDermid, G., Moorman, B., Whitehead, K. “[TOWARD 4D AUTOMATED CHANGE DETECTION IN CRYOSPHERIC SYSTEMS: A MULTI-RESOLUTION APPROACH TO POINT CLOUD REGISTRATION WITHOUT CONTROL POINTS](#)” *AGU Fall Meeting*, Poster
- 2005 **Wecker, L.**, Samavati, F. F. and Gavrilova M. (2005) “[IRIS SYNTHESIS: A REVERSE SUBDIVISION APPLICATION](#)” *International Conference on Computer Graphics and Interactive Techniques in Australasia and South East Asia (GRAPHITE)* in association with ACM SIGGRAPH, Short Paper