Robin Thibaut

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SUMMARY

Lead research and development on durable agent systems for long-running scientific, technical, and operational work. Previously owned the subsurface-modeling codebase for geothermal exploration, building and calibrating 3D geological and thermal models against well and geophysical data with quantified uncertainty. Earlier research focused on machine learning for Bayesian experimental design and uncertainty reduction in subsurface problems.

SKILLS

Agent systems — long-running, tool-using agents; problem decomposition; context management; uncertainty handling; multi-step evaluation.

Modeling and uncertainty — 3D geological and thermal modeling; finite-element simulation; Bayesian experimental design; uncertainty quantification; optimization.

Scientific software and data — Python; scientific-software development; data pipelines; machine learning for geophysical, hydrologic, and echosounder data.

Geophysics — marine and land survey methods: magnetometry, seismic refraction, side-scan sonar, multibeam, electrical resistivity, and time-domain induced polarization.

EXPERIENCE

Zanskar Geothermal & Minerals

Head of Agentic Systems R&D August 2026–Present

- Lead research and development on durable agent systems for long-running scientific, technical, and operational work, spanning problem decomposition, tool and data use, context management over extended tasks, uncertainty handling, and evaluation across multiple steps.

Senior Computational Geoscientist October 2024–August 2026

- Owned the subsurface-modeling codebase for 3D geological and thermal models used in geothermal exploration.
- Built data pipelines and scientific-software workflows for fault geometry, stratigraphy, and finite-element thermal simulation.
- Calibrated models against well and geophysical data; quantified uncertainty and used optimization to support well targeting.

Lawrence Berkeley National Laboratory August 2023–September 2024

Postdoctoral Researcher, Watershed Function Scientific Focus Area

- Model–data integration for mountainous watersheds combining geophysical observations, hydrologic modeling, and machine learning.

Ghent University March 2023–May 2023

Postdoctoral Researcher, TURBEAMS

- Applied machine learning to multibeam echosounder data to estimate turbidity and suspended particulate matter in coastal waters.

EXPERIENCE - CONTINUED

Ghent University March 2019–March 2023

PhD Fellow

- Doctoral research on Bayesian Evidential Learning, experimental design, and uncertainty reduction for subsurface problems, including wellhead protection and temperature monitoring.
- Co-developed SKBEL, open-source research software for Bayesian Evidential Learning.

G-tec March 2018–January 2019

Project Engineer

- Planned, mobilized, acquired, processed, and reported marine geophysical surveys for unexploded-ordnance detection, seabed-layer characterization, bathymetry, and hydrographic investigation, using magnetometry, seismic refraction, side-scan sonar, and multibeam.

SELECTED RESEARCH, SOFTWARE, AND DATA

Chen, H., **Thibaut, R.**, Chou, C., Xiong, C., & Wu, Y. (2026). A ModEx Framework for Watershed Subsurface Investigation With Limited Geophysical Data Using Machine Learning and Hydrologic Modeling. *Geophysical Research Letters*, 53(2), e2025GL119953. doi:10.1029/2025GL119953.

Thibaut, R. & Ramgraber, M. (2021). SKBEL - Bayesian Evidential Learning framework built on top of scikit-learn [Software]. Zenodo, v2.0.0. doi:10.5281/zenodo.6205242.

Thibaut, R., Compaire, N., Lesparre, N., Ramgraber, M., et al. (2022). Comparing Well and Geophysical Data for Temperature Monitoring Within a Bayesian Experimental Design Framework. *Water Resources Research*, 58(11). doi:10.1029/2022WR033045.

Ifrene, G., Rabade, S., Pollack, A., **Thibaut, R.**, et al. (2026). Lightning Dock Geothermal Field Data Package, Hidalgo County, New Mexico [Data set]. Geothermal Data Repository. Zanskar geothermal & minerals inc. GDR submission 1856.

Full publication record: ORCID 0000-0001-7556-2700

EDUCATION

PhD, Geological Sciences — Ghent University 2019–2023

Dissertation: *Machine Learning for Bayesian Experimental Design in the Subsurface*

MSc, Geological Engineering — University of Liège 2014–2017

BSc, Geological Sciences — Université libre de Bruxelles 2010–2014