

Monica Spisar

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citizenship: EU, Canada | US: TN status eligible

monicaspisar.com · github.com/msyvr · [Google Scholar](https://scholar.google.com/citations?user=...) · [LinkedIn](https://www.linkedin.com/in/monicaspisar)

RESEARCH MANAGEMENT & LEADERSHIP

Portfolio Manager / Scientific Liaison — University of Oxford (longevity bioscience) 2019 – 2021

- Built and delivered a \$1.2MM longevity drug-discovery research portfolio.
- Scoped >50 research proposals in <6 months; ran a grant round to fund a select cohort.
- Field building activities in an emergent scientific domain.
- Managed cross-sector regulatory pathway work spanning academia, industry, and UK government (clinical trial design and publicly funded trial pathways).
- Brief overview of this work: [Hedging bets on healthier aging](#)

COO — Mineral Deposit Research Unit, University of British Columbia 2013 – 2015

- Co-led strategy, fundraising, and operations for an industry-academic research unit.
- Led unit reorganization for impact and operational effectiveness; budget O(\$MM).

Program Manager & Industry Grants Officer — University of British Columbia 2011 – 2013

- Ran cross-disciplinary entrepreneurial-skills program for MD/PhDs (Aspect Biosystems founded as a result)
- Negotiated 200+ industry-academia agreements/year.

RESEARCH & ENGINEERING EXPERIENCE

Independent Research — Technical AI Safety 2026 – present

- Projects spanning several subareas of technical AI safety, approached with a physical-sciences measurement and experimental-design lens. Special interest in emergent properties of AI systems. Active projects:
 - evaluation-invariant measurement for multi-agent collectives: [msyvr/emmy](#)
 - anti-scheming mitigation eval separating strategic deception from capability failure: [msyvr/pants-on-fire-eval](#)
 - measuring the evaluation-awareness discount: [msyvr/lms-en-garde](#)
 - characterizing NLAs as white-box readouts of latent space: [msyvr/activation-tomography](#)
 - simulated mitigations for publish-or-perish dynamics in automated research ecosystems: [msyvr/paper-chase](#)
- Supported by a grant from [BlueDot Impact](#)

Machine Learning Software Research Engineer — Softmax (AI alignment / RL) (contract) 2025 – 2026

Multi-agent benchmark and training platform for social-intelligence research

- C++/Python training and evaluation environment supporting cooperative and competitive reinforcement learning policies across multi-agent scenarios; environment feature development (e.g. chess-clock game mechanic) and performance optimization (8% SPS improvement).
- Tournament + evaluation infrastructure serving internal researchers and external contributors as distinct tenants on shared compute; CI/CD pipelines (GitHub Actions, LLM automation); Docker multistage build redesign (~75% build-time reduction).

Independent Research / Self-directed Learning — Recurse Center (AI / AI Safety) 2021 & 2024

- Speed-ran *ARENA* through the transformer chapter (mechanistic interpretability foundations); engaged with presentations/discussions on technical AI safety and capabilities forecasting.
- Built and evaluated transformers, CNNs, and GANs in PyTorch; built micrograd-style neural network from scratch in Python (companion blog post on MLP design and SGD).

Software Engineer / Data Engineer — Lantern (censorship circumvention) 2022 – 2024

Globally distributed service: millions of concurrent users, cross-geography compliance constraints

- Designed and built an end-to-end real-time data pipeline (OpenTelemetry instrumentation and transport/collector to GCP/BigQuery and observability platforms, plus dashboards in Superset and Honeycomb/Datadog); peak throughput 1.5 MiB/s reliably; 50% data-cost reduction; led data-warehouse migration (Rockset to BigQuery).
- Multi-stakeholder data platform serving infra, business, and client teams as distinct consumers with bespoke schemas, SLAs, access patterns.

Research Engineer / Data Scientist — Kardium (medical devices, Employee #16) 2008 – 2011

- Early-stage engineer at a Class II/III medical-device startup; led deployment imaging for a Class III transcatheter mitral-valve-repair device; led device characterization, preclinical trial design, and initial clinical evaluation for a Class II sternal-closure device. Patents 8,888,791 and 9,700,363.

ENTREPRENEURSHIP

I was on the founding team of Xoran, a small footprint CT scanner spin-out from the University of Michigan, now a successful company. For a decade alongside my technical research career, I ran brick-and-mortar local companies: I acquired and led a retail/wholesale bakery (7 years), and founded and directed a progressive childcare center (4 years).

PROFESSIONAL SERVICE

Ethics Reviewer — NeurIPS

2026

Director (Independent) — The Open School — California, USA

2022 - 2023

TECHNICAL SKILLS

- **ML / RL:** PyTorch; scikit-learn, NumPy, SciPy, Pandas; PettingZoo, PufferLib, Metta.
- **ML experiment tracking & compute:** Weights & Biases, Modal, Runpod, Prime Intellect.
- **LLM tooling:** Hugging Face, Ollama, vLLM.
- **AI safety research:** TransformerLens, Inspect, ControlArena, nnsight, Cogames.
- **Languages:** Python, Go, Rust, SQL, TypeScript/JavaScript, C++, MATLAB.
- **Backend:** FastAPI, Pydantic, gRPC, PostgreSQL, MySQL, Redis.
- **Infrastructure:** GCP, AWS, Docker, Terraform, OpenTelemetry, Datadog, BigQuery, Rockset, GitHub Actions.

PEER-REVIEWED PUBLICATIONS

(Selected; full list on Google Scholar — ~700 total citations)

- Hamilton JD, Buma T, Spisar M, O'Donnell M. High frequency optoacoustic arrays using etalon detection. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control 47, 2000. (cited 219×)
- Buma T, Spisar M, O'Donnell M. High-frequency ultrasound array element using thermoelastic expansion in an elastomeric film. Applied Physics Letters 79(4), 548–550, 2001. (cited 208×)
- Spisar M, Conway E, Buma T, O'Donnell M. Stabilized, resonant optoacoustic array detectors for medical imaging. World Congress on Ultrasonics, 25–28, 2003. (cited 19×)
- Spisar M, Aarsvold JN, Mintzer RA. DETECT97 simulation studies of light output in a full field-of-view small gamma camera. IEEE Nuclear Science Symposium Conference Record 2, 1188–1192, 1997. Monte Carlo photon-transport simulation; statistical image reconstruction.

OPEN-SOURCE PROJECTS & WRITING

- **emmy:** evaluation-invariant measurement for multi-agent collectives. [msyvr/emmy](#)
- **pants-on-fire-eval:** evaluation of a decomposed anti-scheming mitigation. [msyvr/pants-on-fire-eval](#)
- **llms-en-garde:** do LLMs misbehave less when they're 'en garde': [msyvr/llms-en-garde](#)
- **paper-chase:** simulation of mitigations for publication-gaming in automated research. [msyvr/paper-chase](#)
- Estimation and detection in AI safety evals. [posts/estimation-v-detection](#)
- Decomposition of a deliberative alignment anti-scheming spec. [research/liar-liar/decomposition-pilot](#)
- Activation tomography. [posts/activation-tomography](#)
- Design considerations for neural networks (zero to micrograd). [posts/micrograd](#)

AI SAFETY TRAINING & ENGAGEMENT

- BlueDot Impact — Courses: Technical AI Safety Project, Technical AI Safety, AI Futures, AI Alignment.
- ARENA materials (through transformer interpretability chapter) at Recurse Center, 2024.
- Regular attendee for virtual AI safety research talks (Apart, alphaXiv, BlueDot, Future of AI Community, Catalyze).
- 80,000 Hours and Successif career mentorship programs for transition into technical AI safety research.

EDUCATION & POSTDOCTORAL TRAINING

Postdoctoral Research Scientist — Sorbonne University, Biomedical Imaging Lab

Paris, France

- High-resolution ultrasound imaging of angiogenesis. Mentored doctoral students.

PhD, Biomedical Engineering (Medical Imaging) — University of Michigan

Ann Arbor, MI, USA

Thesis: Optoacoustic Detector Arrays for Medical Imaging Applications

- Designed, built, and characterized a laser-based ultrasound imaging system.
- Pre-thesis research: statistical image reconstruction and Monte Carlo simulations for early breast cancer detection.

BSc, Physics — University of Toronto

Toronto, Canada