Monica Spisar

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Software skills + Projects + Posts

Python, Go, Rust. NumPy, PyTorch. SQL, PostgreSQL, SQLite, Redis, BigQuery, Open Telemetry, Honeycomb, Datadog, Grafana, Prometheus. Superset, Rockset, Looker. Docker. Terraform. GCP, Digital Ocean, AWS. Git. Bash.
Projects (GitHub): agentrix, micrograd-python, ray tracers (Rust, Python), multisource downloader
Posts (monicaspisar.com): Designing neural networks; Rust memory management; Go(lang) now!; AI in medical imaging

Technical IC Experience

Recurse Center Software craftsmanship & upskilling 2021.09 - 2021.12 & 2024.05 - 2024.08
Dramatically improved my software engineering skills in both batches at `*the writing residency for programmers*`.
2024: Career transition to machine learning, AI safety (mechanistic interpretability), memory-safe languages (Rust).
2021: Career transition to backend engineering. Focused on code craftsmanship.

Lantern Software Engineer, Censorship circumvention systems 2022.03 - 2024.05
Rebuilt a data pipeline and migrated a data warehouse, reducing data storage and processing costs by 50%. Designed and built client metrics and ops/dev dashboards to both secure O($MM) funding and accelerate complex service recovery (days -> hours). Completed tickets to support distributed cloud infrastructure delivering web and mobile apps. Go, Python, Rust, GCP, Docker, Terraform, Open Telemetry, Superset, Big Query, Honeycomb, Datadog, Tailscale.

Kardium Research Engineer (Employee #16), Medical devices 2008.11 - 2011.01
Transcatheter mitral valve repair: led imaging for deployment guidance; worked on device design; led design of preclinical trials. Sternal closure device: led performance characterization (simulations, lab) and clinical evaluation.
Patents: 8888791, 9700363: Surgical instrument and method for tensioning and securing a flexible suture

Biomedical Imaging Lab, Sorbonne University Research Scientist (Postdoc) 2003.09 - 2004.09
Designed and built a microfluidics-based vascular flow model system for high resolution ultrasound imaging.

Leadership + Management Experience

University of Oxford Scientific Liaison / Portfolio Manager 2019.02 - 2021.07
Scouted, funded, managed $1.2MM longevity portfolio. Details: monicaspisar.com/posts/hedging-bets-longevity

Mineral Deposit Research Unit Interim Associate Director 2013.10 - 2015.10
Led operations, finance (budget O($MM)). Led strategy, new initiatives. Board liaison. Planned, executed unit reorg.

University of British Columbia Program Manager & Industry Grants Officer 2011.04 - 2013.06
Delivered a translational training program. Negotiated and managed 200+ industry-academia agreements annually.

Panne Rizo Owner/Operator/Director 2004.10 - 2011.01
Automated ops to transform a micro-managed business into a local retail/wholesale enterprise. ARR ~$500k.

Xoran Technologies Early stage startup team member 2000.01 - 2000.11
Small footprint CT scanner. On early team, to seed funding (SBIR: $250k/$1.5M).

Education + Research training

University of Michigan PhD, Biomedical Engineering (Medical Imaging)
Thesis: Optoacoustic detector arrays for medical imaging applications. Publications: Google Scholar: Monica Spisar
Designed, built, tested a laser-based ultrasound imaging system with novel detection technology. Met clinical requirements, 10x sensitivity increase. Signal capture, image processing, image reconstruction, systems analysis.

University of Toronto BSc, Physics