

MONICA SPISAR

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SOFTWARE SKILLS + PROJECTS + POSTS

Python, Go, Rust. NumPy, sklearn, PyTorch. MATLAB. SQL, PostgreSQL. Open Telemetry, Honeycomb, Datadog. Grafana, Prometheus. BigQuery. Rockset. Docker. Terraform. Tailscale. GCP, AWS. Git. Bash. Wireguard. Javascript, HTML, CSS.

Projects (GitHub): micrograd-python, ray tracers (Rust, Python), agentrix, 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: Foundations for machine learning, AI safety (mechanistic interpretability), memory-safe languages (Rust).

Designing neural networks: zero to micrograd, Rust: Notes on memory management. GitHub: micrograd-python, ruray.

2021: Computer science fundamentals. Focused on backend engineering (mainly in Python, Go) and code craftsmanship.

Naive ray tracer implementation in Python. GitHub: raytracer (Python).

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%. Created dashboards (client metrics, ops, dev) crucial for securing O(\$MM) funding and reducing service outage durations O(10x).

Member of technical team managing distributed cloud infrastructure serving O(MM) users, around centralized blocking efforts. 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

Led device performance characterization (computer simulations, lab), preclinical trial design, initial clinical evaluation for a class II device for sternal closure. Led deployment imaging design for a class III device for transcatheter mitral valve repair. 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 Portfolio Lead / Scientific Liaison 2019.02 - 2021.07

Built \$1.2MM longevity bioscience portfolio: scouted, managed projects. monicaspisar.com/posts/hedging-bets-longevity

Mineral Deposit Research Unit COO 2013.10 - 2015.10

Led operations, finance (budget O(\$MM)). Co-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 CEO 2004.10 - 2011.01

Transformed micro-managed business into local retail/wholesale enterprise. Earned coveted Whole Foods supplier slot.

Xoran Technologies Early stage startup team member 2000.01 - 2000.11

Startup to commercialize a 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