Leopold Haller

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Summary

I am a **research engineer** and **technical leader** with 10+ years of professional experience in software engineering, ML engineering and research. I am seeking a challenging IC role on the cutting-edge of AI research or product development as part of a capable team. My academic background is in automated reasoning and static analysis, and I am particularly interested in the intersection of **machine learning**, **automated reasoning** and **program search**.

Key skills: ML, RL, generative AI agents, software engineering, greenfield AI product development, automated reasoning, SAT/SMT, formal verification, theorem proving.

Experience

Cofounder & Chief Research Officer, Agentic – San Francisco, CA — June 2021 – Dec 2024

- Led research team of 3 on **interactive training of video game AI** for game testing.
- Developed novel techniques in imitation learning and RL to build a product that allows ML-naive game developers to train useful agents on interactive time-scales.
- Initiated a company pivot from ML to Voyager-style **LLM-based code generation** for video game AI (GDC trailer), owning the project from prototype through deployment.
- Developed an open-source framework for generative software, **enact** (github) to serve as the basis of our agents stack.
- Key contributor to all aspects of development, including backend infrastructure, research, UX and product.

Senior Software Engineer, Google – San Francisco, CA — May 2015 – June 2021

- **Google Brain** - *Kernel Product Incubator* (2019): Core contributor on **ML-driven video game agents**. Designed and developed DAgger-style training methodology and built initial service architecture for **continuous live training**. (patent, OSS repo)
- **Area120** - *Chatbase* (2017): Trained early **LLMs** (BERT) for chat applications. My work was central to our team securing the first **successful exit** from the Area120 incubator program. Rebuilt live data-analytics backend of our chat telemetry platform.
- **Security & Privacy** (2015): Developed large-scale **static code analyses** for detecting privacy concerns.

Member of Consulting Staff, Cadence Design Systems – Berkeley, CA — Dec 2012 – May 2015

- Developed SAT/SMT-based algorithms for **formal verification** of hardware designs.

Research Intern, Microsoft – Cambridge, UK — May 2009 – Aug 2009

- Developed FPGA-based constraint propagation accelerator for SAT solving.

Education

University of Oxford, PhD in Computer Science, Formal Methods (dissertation) — 2008 – 2013

- 14 conference & journal publications in formal methods

Vienna University of Technology, MSc in Computational Intelligence — 2006 – 2008

Johannes Kepler University Linz, BSc in Computer Science — 2003 – 2006

Advisorships

Advisor, Newlife.ai — May 2024 – present

- Advising on blockchain protocols for distributed AI agents.

Advisor, Standard Deviants — Mar 2023 – present

- Advising on generative AI for interactive story-telling.

Technologies

Main languages & Frameworks: Python, C++, tf, tflite, jax, numpy, pandas, Lean, Go

Tech: gcloud, kubernetes, postgres, spanner, dremel/bigquery, grpc, protobuf

OSS Projects

enact - A framework for generative software. github/agentic-ai

- Framework for managing execution of scaffolding programs: telemetry, serialization, record / replay.
- Example: Generic MCTS implementation for scaffolding programs (notebook)

threaded-async github/agentic-ai

- Helper library used internally at agentic to coordinate asynchronous AI-generated python code with game engines via a task system.

Falken github/google-research

- Python service & C++ SDK for DAgger-style training of video game AI, built as part of a Google team.