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. With a foundation in automated reasoning and formal verification, and recent work in generative AI and program synthesis, I am particularly interested in exploring the intersection of these fields. Seeking a challenging IC role on the cutting-edge of AI research or product development as part of a capable team.

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 **technical direction** for research team of 3, developing novel approaches to interactive training of **video game AI for game testing**.
- Pioneered novel techniques in **imitation learning and RL** to enable ML-naive game developers to train useful agents within 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, product, hiring.

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, designing and implementing DAgger-style training methodology that became the foundation for **continuous live training** architecture (patent, OSS repo).
- **Area120** - *Chatbase* (2017): Fine-tuned early **LLMs** (BERT) for intent detection in chat applications. My work helped secure a 9 figure enterprise deal and the first **successful exit ($100M internal valuation)** from the Area120 incubator program. Architected high-throughput data-analytics backend for our chat telemetry platform.
- **Security & Privacy** (2015): Developed **static code analyses** for detecting privacy concerns at Google scale.

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

- Developed SAT/SMT-based algorithms for formal verification of hardware designs, substantially reducing verification times for customers through portfolio-based approaches.

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

- Developed FPGA-based accelerator for SAT solving via novel dual-channel RAM clause encoding.

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, Agentic — Dec 2024 – present

- Transitioned from Co-Founder / CRO into advisorship role.

Advisor, Newlife.ai — May 2024 – present

- Blockchain-based project around protocolizing GenAI and agents: advising on protocol design, requirements of AI community, strategic direction.

Advisor, Standard Deviants — Mar 2023 – present

- GenAI for interative story-telling: advising on technical team composition, scriptable story-engine, image gen approaches with character and style consistency.

Technologies

Languages & Frameworks: *Primary:* python, C++, tf, tflite, numpy; *Secondary:* jax, pandas, pytorch, lean, go, ocaml, lua, C, VHDL, etc.

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.