FANTINE HUOT

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AI Research Engineer and computational earth scientist, specialized in the intersection of AI and real-world applications.
8 years of experience in developing and scaling ML models on terabytes of messy data for scientific applications (LLMs, numerical modeling, time-series, seismic, and satellite data), 12 years of experience working in technical fields.

RELEVANT EXPERIENCE

Google DeepMind, *Research Engineer*   **Amsterdam, Netherlands,** *2022 - Today*
Natural Language Processing:
- Lead instruction-following efforts for Gemini and Gemini 1.5, achieved 9% increase in proportion of instructions followed, leading to SOTA performance: [link] [link].
- Developed planning approaches for controllable and steerable LLMs, resulting in more faithful and grounded text generation: [link] [link] [link].
- Hosted and mentored interns, resulting in published work at ACL and NeurIPS: [link] [link] [link].
Computer Vision:
- Worked on scaling up vision transformers to 22B parameters: [link].
- Developed data processing pipelines and ML models for wildfire risk assessment: [link].
- 20% Advisor for Google X, developing event detection workflows for Earth subsurface monitoring.

SambaNova Systems, *Principal Engineer - AI for Science*   **Amsterdam, Netherlands,** *2021 – 2022*
- Designed high-performance computing (HPC) algorithms for scientific applications on SambaNova AI accelerators.
- Designed graph computation and memory layout for linear algebra kernels.
- Developed physics-informed neural networks (PINN) and computational fluid dynamics (CFD) solvers.

Stanford University, *Research Assistant*   **Stanford, CA, USA,** *2015 – 2021*
- Designed, conducted, and published research on using machine learning for a better understanding of the Earth.
- Demonstrated that it was possible to record seismic waves in urban areas using fiber-optic cables from the existing telecommunication network: [link].
- Developed a microseismic event detection model, allowing for detailed mapping of fractures in the subsurface: [link].
- Designed an algorithm to automatically filter unwanted coherent noise that could not be removed by existing methods, while preserving the signal of interest. Submitted a patent application: [link].
- Relevant publications: [link] [link] [link].

Actimage, *Software Engineering Project Manager*   **Paris, France,** *2013 – 2015*
- Managed a team of 5 software engineers.
- Coordinated with clients and engineers to define needs and constraints, and evaluate optimal solutions.
- Developed software for health monitoring, education, and social networks.

EDUCATION

Stanford University, *Ph.D. in Geophysics*   *2021*
Ecole Nationale Supérieure des Mines de Paris, *M.S. in Science and Executive Engineering*   *2013*

SKILLS & AWARDS

- Python and C++, TensorFlow / JAX, PyTorch, GPU / TPU development, GCP.
- Awarded **Top AI Researcher 2024**, Women in AI, an EU-funded organization for gender inclusivity in the field of AI.
- Awarded **Top 25 Technical Program Presenters**, Society of Exploration Geophysics, 2018: [link].
- Obtained the **ITEA 2 (Information Technology for European Advancement) EUREKA Award,** 2014.