

# Nassim Massaudi

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AI Engineer & Independent Researcher | World Models · Optimal Control · Applied ML

## SUMMARY

AI Engineer and independent researcher exploring the intersection of World Models (JEPA approach) and Optimal Control, interested in systems that plan through learned physics models rather than pattern matching alone. Trained at Mila–Quebec AI Institute. Experienced in deploying production-grade RAG and forecasting systems on distributed cloud architectures (GCP/Azure), and in formalizing technical uncertainty for federal scientific audits (SR&DE).

## EDUCATION

<b>Mila - Quebec AI Institute / University of Montreal</b> <i>M.Sc. in Computer Science - Artificial Intelligence</i>	Montreal, Canada 2023 – 2024
· Focus: Deep Learning, Reinforcement Learning, Generative Models, and State Representation Learning.	
<b>Laval University</b> <i>M.Sc. in Computer Science - Artificial Intelligence</i>	Quebec City, Canada 2020 – 2023
<b>ECE Paris (Graduate School of Engineering)</b> <i>Engineering Degree - CS &amp; Information Systems Security</i>	Paris, France 2019 – 2022

## TECHNICAL SKILLS

<b>Languages &amp; Frameworks:</b> Python (Expert), JAX/Flax, PyTorch, C++ (Debugging/Reading), SQL, Bash/Unix.
<b>ML &amp; Research:</b> Reinforcement Learning (PPO, SAC, MuZero), World Models, JEPA-style learning, State Representation Learning, Transformers, RAG.
<b>Infrastructure &amp; DevOps:</b> GCP (Vertex AI, GKE), Azure (OpenAI Service, AI Search), Docker, Kubernetes, Slurm, Git, CI/CD.
<b>Research Interests:</b> World Models, Optimal Control, Differentiable Environments, Orbital Mechanics (active exploration).

## PROFESSIONAL EXPERIENCE

<b>AI Engineer / ML Consultant</b> <i>AI Global Pros</i>	2019 – Present Montreal, Canada
· <b>Technical Formalization &amp; Scientific Audit (RS&amp;DE):</b> Authored rigorous technical documentation justifying technological advancements in GAN and RL architectures. Defended experimental methodologies against federal auditors to secure <b>\$1.1M+</b> in research tax credits, successfully overturning prior rejections through technical authority.	
· <b>Production RAG Architecture (Camions BL):</b> Designed and deployed a scalable RAG assistant on Azure. Implemented complex retrieval logic for repair order analysis, resulting in a <b>37% increase</b> in operational efficiency and significant reduction in diagnostic cognitive load.	
· <b>High-Dimensional Forecasting (NAPA Auto Parts):</b> Built a GCP-native forecasting platform predicting demand for <b>2,000,000+</b> customer-product pairs. Optimized data pipelines and model inference on GKE to provide real-time actionable intelligence to distributed field teams.	
· <b>Distributed AI Platform (Vidéotron):</b> Developed containerized forecasting models within a high-throughput Kafka/Kubernetes environment. Ensured robust deployment of ARIMA/XGBoost models for real-time mobile data stream processing.	

## PUBLICATIONS

<b>L. Maes, Q. Le Lidec, D. Haramati, N. Massaudi, D. Scieur, Y. LeCun, R. Balestrieri.</b> "stable-worldmodel-v1: Reproducible World Modeling Research and Evaluation." arXiv:2602.08968 [cs.AI], 2026. <a href="#">Link to Paper</a>
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## RESEARCH PROJECTS

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### State Representation Learning for Visual Deep RL

2024

*Mila Research Institute*

*Montreal, Canada*

- Analyzed SOTA methods for learning from high-dimensional visual inputs. Benchmarked generalization capabilities on DMControl tasks, focusing on encoder robustness in non-stationary environments.

### Non-Contrastive Representation Learning Analysis

2023

*Laval University*

*Quebec City, Canada*

- Evaluated SimSiam and Barlow Twins architectures for robotics perception. Investigated collapse prevention mechanisms in the absence of negative pairs, a key factor for sample-efficient robot learning.