

Boammani Aser Lompo

Msc



About me

MSc in Mathematics and Machine Learning with strong expertise in Visual Reasoning, Reinforcement Learning, and Applied Mathematics. Passionate about advancing multimodal AI and bridging theoretical and applied research.

Webpage

<https://aser97.github.io/Blog/>

Areas of specialization

NLP • LLM • RL • Maths

Interests

- Photography & Content Creation
- **Competitive Chess (2000 Elo)**



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[@AserLompo](#)

Aser Lompo

Aser97

RESEARCH & WORK EXPERIENCE

2021 Internship, Department of Statistics, CREST, ENSAI

INTERN • Rennes 📍

Research on unimodal bandits for ranking systems. Keywords: Recommender Systems, Multi-armed Bandits, Learning to Rank. Supervisor: Romaric Gaudel

2020 Internship in a Research Laboratory in Cryptology, INRIA

INTERN • Paris 📍

Measuring privacy of cryptographic systems and studying the properties of optimal-privacy systems. Supervisor: Catuscia Palamidessi

DEGREES

2025 MSc in Computer Science

NLP • Ecole Technologie Supérieure (Montreal) 🎓

2023 MSc in Mathematics, Vision and Learning

• Ecole Normale Supérieure (Paris) 🎓

2021 MSc in Fundamental Mathematics

• Ecole Normale Supérieure (Rennes) 🎓

TECH STACK

Languages: Python • Model Context Protocol (MCP) • JavaScript • C++ • Bash • HTML/CSS

Frameworks: PyTorch • Transformers • JAX • Hugging Face • APIs

Tools: Docker • Paperspace

Focus Areas: Visual Reasoning • Number Encoding • Reinforcement Learning • Mathematics

PORTFOLIO

Visual-TableQA

• **2.5k** high-quality and complex images

- **9k** reasoning intensive QA pairs
- Cost-efficient pipeline (**<\$100**)
- Effective for Finetuning (**+ 17%**)
- Github

LLM-Number-Encoder

• Simple LLM Encoder Upgrade

Encoding • Effective on numerical reasoning tasks (**+ 12%**), Github

More on my webpage.

CERTIFICATES & GRANTS

2024 Recipient of R-SADC scholarship 2024 (**23,000\$**)

2018–22 French Government Excellence Grant (**50,000\$**)

2024 Best Poster Presentation **Acfas 2024**

2014 Honourable Mention at the International Mathematics Olympiad (**IMO**) in Cape Town 2014

2015 **Gold medal** at the Panafrican Mathematics Olympiad in Abuja

2015 Winner of the National Math Contest in Burkina Faso 2015

PUBLICATIONS

2025 Boammani Aser Lompo, Marc Haraoui. *MODALITY-SWAP DISTILLATION: Rendering Textual Reasoning into Visual Supervision*. Under review as a conference paper at **ICLR 2026**

2025 Boammani Aser Lompo, Marc Haraoui. *Visual-TableQA: Open-Domain Benchmark for Reasoning over Table Images*. **NeurIPS 2025** Workshop on Foundations of Reasoning in Language Models. [PDF]

2024 Boammani Aser Lompo, Thanh-Dung Le, Philippe Juvet, Rita Noumeir. *Multi-objective Representation for Numbers in Clinical Narratives: A CamemBERT-Bio-Based Alternative to Large-Scale LLMs*. **CoRR 2024**. [PDF]

2021 Camille-Sovanneary Gauthier, Romaric Gaudel, Elisa Fromont, Boammani Aser Lompo. *Parametric Graph for Unimodal Ranking Bandit*. **ICML'21**. [PDF]

LANGUAGES

English | Fluent (C2)
French | Native (C2)

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@ <https://aser97.github.io/Blog/>