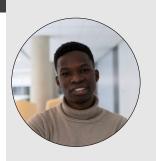# Boammani Aser **Lompo**

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.
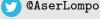
## Webpage

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

## Areas of specialization

NLP · LLM · RL · Maths

## Interests

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

@ lompoaser@yahoo.fr

 @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 Superieure (Montreal) 🏛

**2023** **MSc in Mathematics, Vision and Learning**
· Ecole Normale Superieure (Paris) 🏛

**2021** **MSc in Fundamental Mathematics**
· Ecole Normale Superieure (Rennes) 🏛

## Programming

| | |
|---|---|
| Pytorch | ████████████ |
| TensorFlow | ██████████ |
| C++ | █████ |
| JavaScript | █████ |

## 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 Encoding** | ·Simple LLM Encoder Upgrade |
| | ·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 Olympiade (**IMO**) in Cape Town 2014 |
| 2015 | **Gold medal** at the Panafrican Mathematics Olympiade in Abuja |
| 2015 | Winner of the National Math Contest in Burkina Faso 2015 |

## Languages

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

## 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 Jouvet, 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] |