Building Open Source Language Models

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LINAGORA

FOSDEM – Brussels - February 4, 2024

OPEN SOURCE MOMENTUM

Meta

mosaicML

TII Technology Innovation Institute

Open Weights models

control over deployment

possibility of fine-tuning

But leaves a lot open to guess work if you want to know *why* something works (or doesn't)

THE PUSH FOR OPEN DATA

- **Common Crawl** (web)
- **C4** (web)
- **ArXiv** (academic papers)
- **Wikipedia**
- **StackExchange** (Q/A threads)
- **The Gutenberg project** (Books)
- **The Stack** (GitHub)
- ...

Hugging Face

EleutherAI

BigScience

together.ai

1. Web crawled data
2. English

SOME CONCERNS

Web data

- personal information
- toxicity
- quality
- format
- duplication

RefinedWeb, OSCAR, CulturaX
(but can't solve everything)

English

- not just a choice
- not just about the language

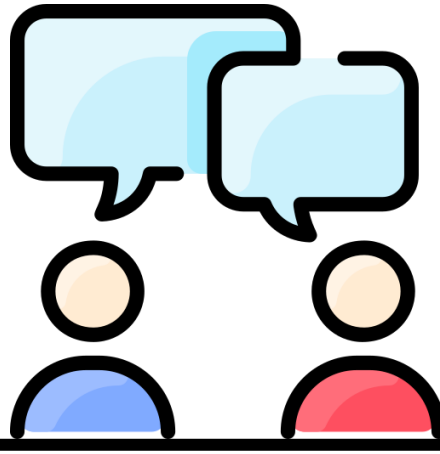
```
Pour faire un boeuf
bourguignon il faut
---
commencer par un bon vin.
To make a beef bourguignon
you must start with a good
wine.
- Julia Child
#####JULIA CHILD
```

- - Mistral

FIRST OBJECTIVES

- Create a **French** dataset with **traceable licenses** that were compatible with LLM training
- Use it to **fine-tune an open weights model** (as a first step) to evaluate impact of dataset

Use case: **spoken dialogue** for understanding and generation



FRENCH DATA DESCRIPTION AND SOURCES

ASSEMBLÉE NATIONALE

Théâtre Classique, Théâtre Gratuit

LINAGORA

Ortolang

1 [cs.CL] 28 Nov 2023

THE CLAIRE FRENCH DIALOGUE DATASET

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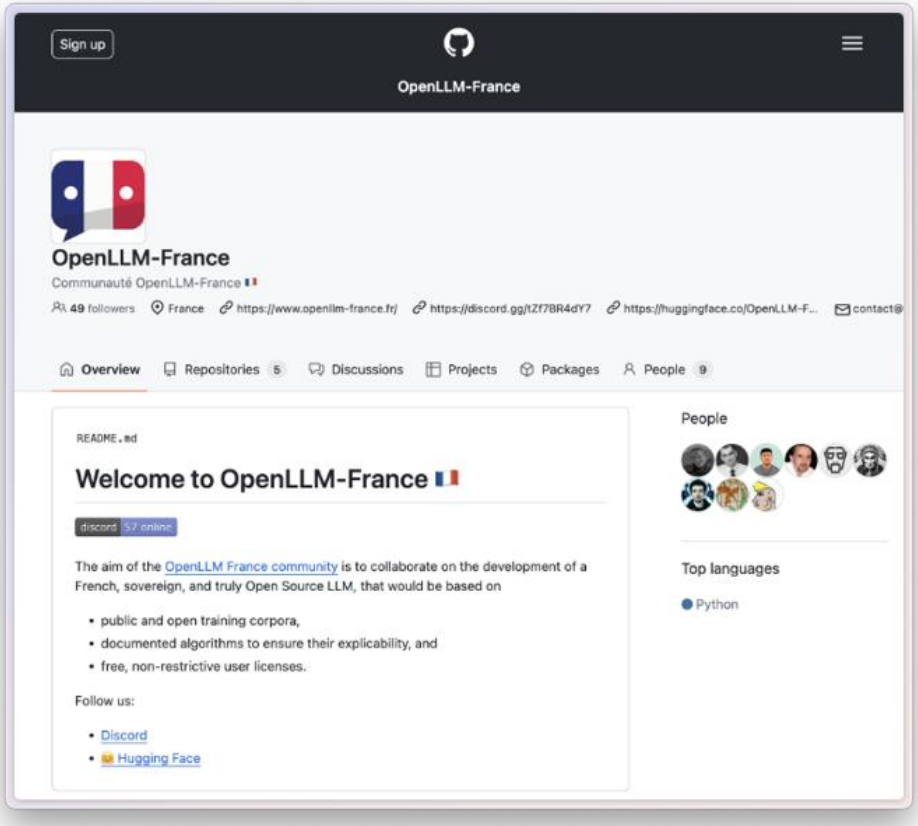
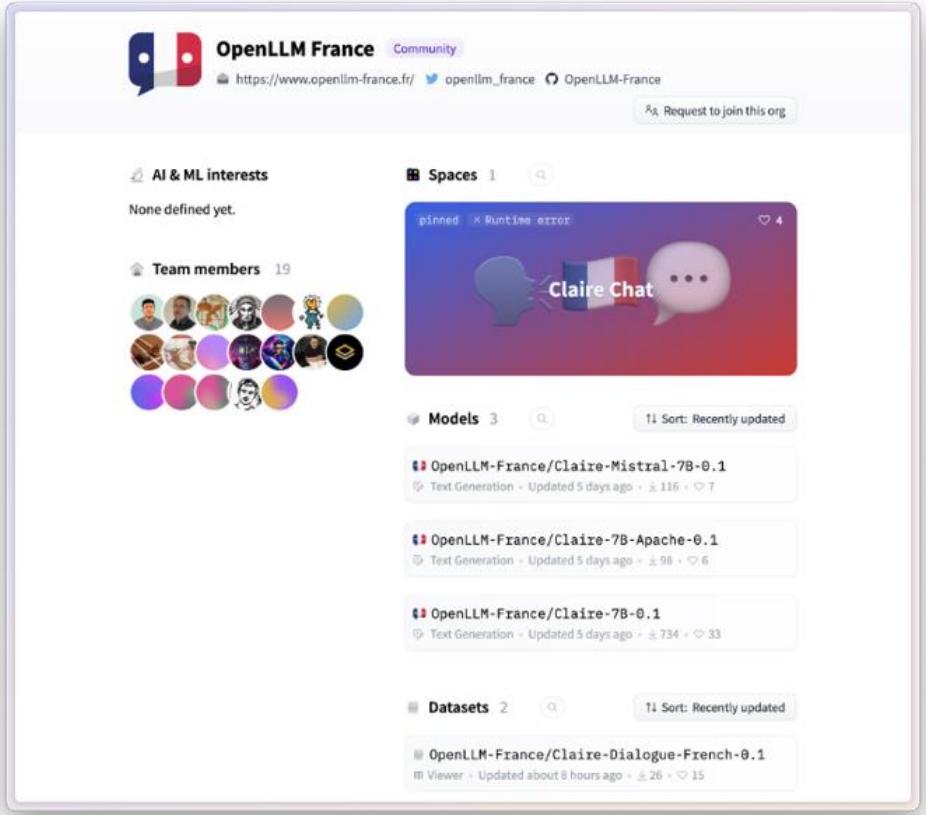
November 2023

We present t … members of LINAGORA … us containing …

arxiv:2311.16840

SHARING THE DATA, CODE AND MODELS





https://github.com/OpenLLM-France

https://huggingface.co/OpenLLM-France

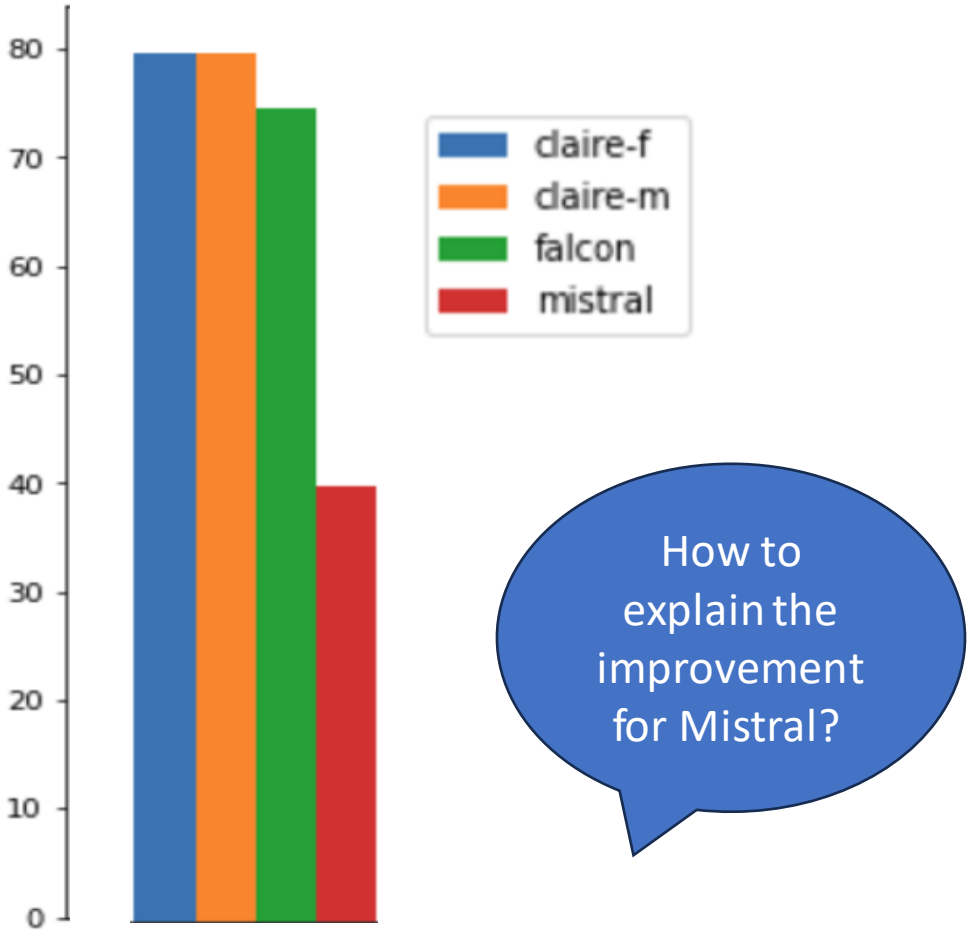
EVALUATION

Does the model stick to French?

```
Je sais pas non plus. Ça veut dire que le
mot est retourné en sens inverse.
[Marc:] Oh oui, comme le verlan.


\\bigskip


\\begin{minipage}{0.55\\textwidth}
\\begin{center}
\\begin{tabular}{r l}
\\toprule
\\textit{Mot} & \\textit{Mot inversé et son sens} \\\\
\\midrule
bécane    ...
```



How to explain the improvement for Mistral?

NEXT STEPS

LUCIE

From scratch
7B parameters
Even mixture of French and English
+ some code
+ some German and Spanish

~140B tokens of French

- Gallica (French National Library)
- Wikipedia
- Academic publications with open access
- Parlementary and public addresses

Some complications: OCR

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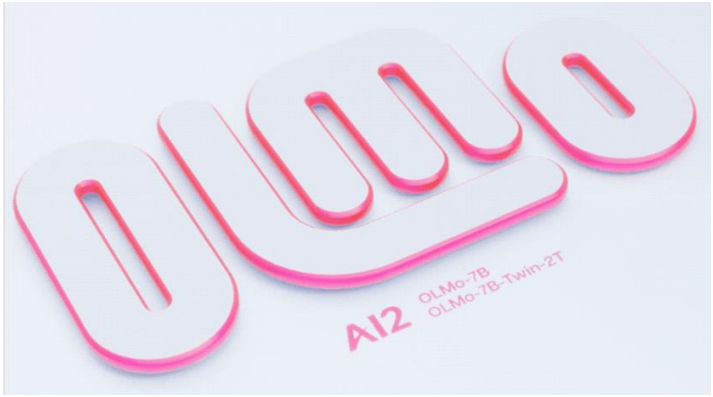
RELATED (AND VERY RECENT!) PROJECTS



Papers arxiv:2402.00786

CroissantLLM: A Truly Bilingual French-English Language Model

Published on Feb 1 · Featured in Daily Papers on Feb 2

Datasets: PleIAs / French-PD-Newspapers

Tasks: Text Generation Languages: French Tags: ocr

OpenLLM-France

More open data – in more languages –and more open models on the way!

MERCI DE VOTRE ATTENTION

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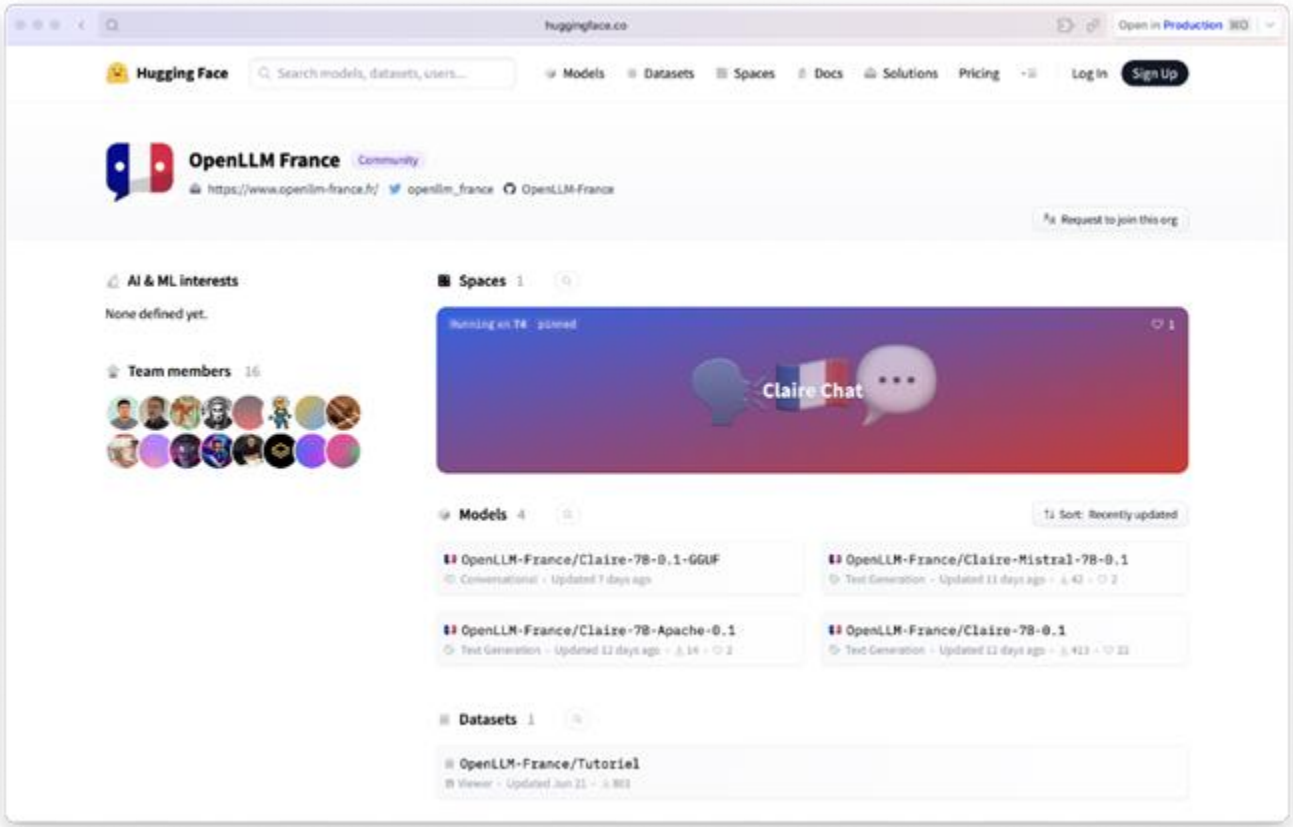
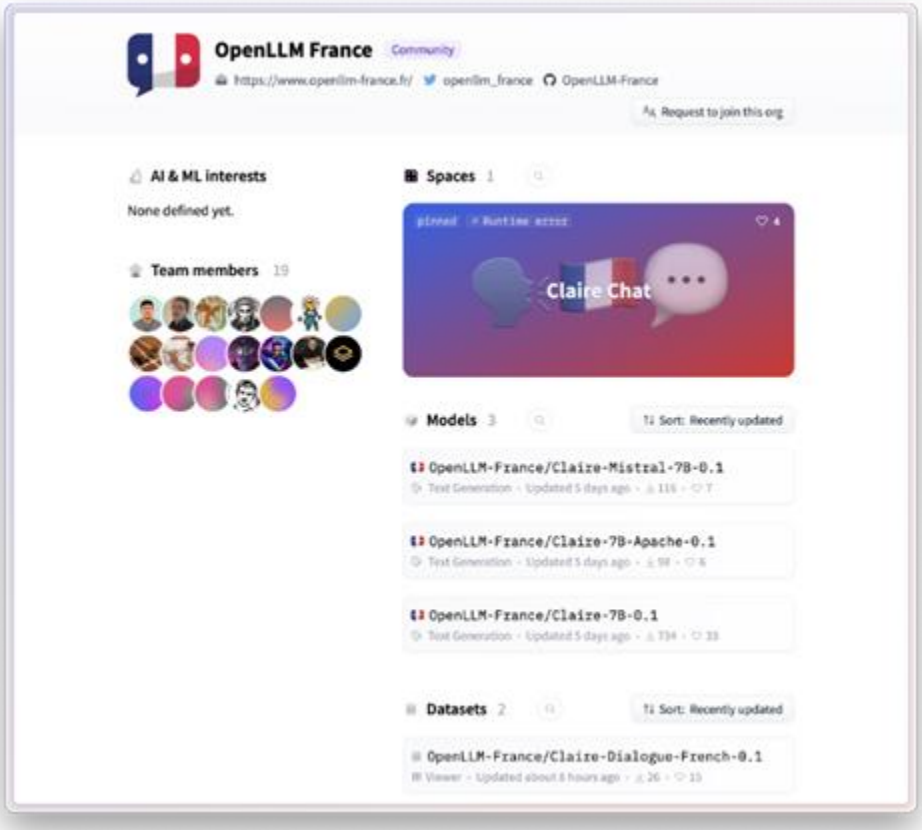
OPENLLM FRANCE

CLAIRE : 1ÈRE PHASE DE NOTRE DÉMONSTRATION SCIENTIFIQUE



OPENLLM FRANCE

REJOIGNONS-NOUS !



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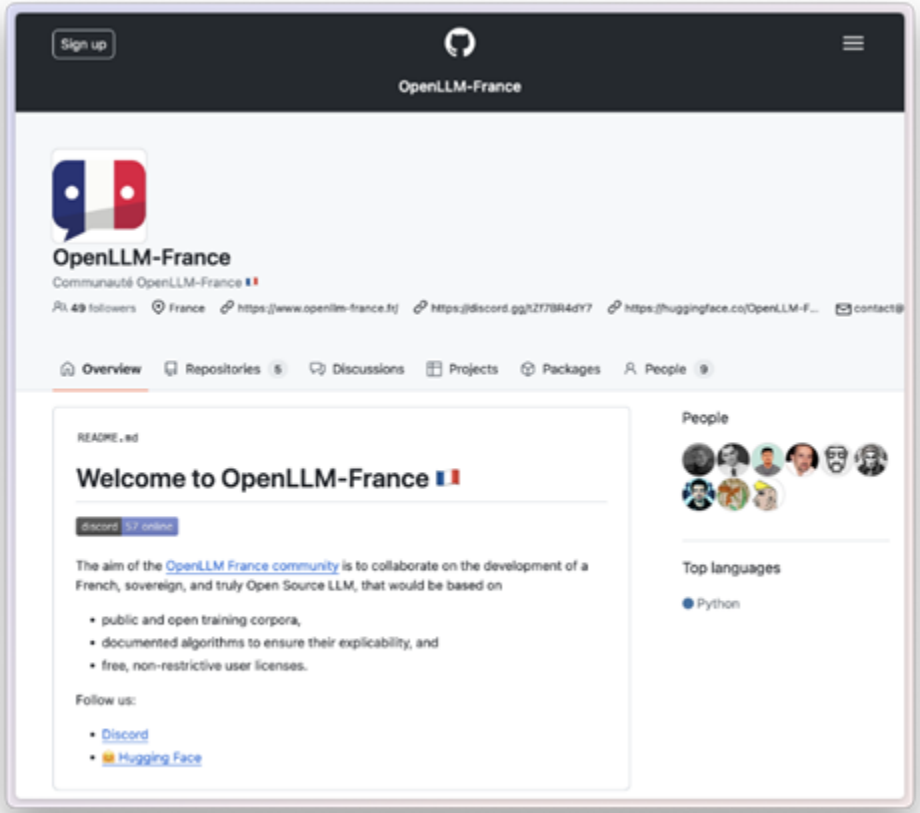

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