



Assessing the Applicability of Large Language Models for Nanomaterials Data Mining: A Case Study on Extracting BBB-Related Nanoparticle Design Parameters

By: Halidu (Khalid) Abdulai

Supervised by: Prof. Dr. Sebastien Lafond & Dr. Hergys Rexha



Chomba Bupe @ChombaBu... · 27 Jun
In as much as I appreciate the empirical tests you are doing, those are still not undeniable evidence for reasoning capabilities in large language models (LLM).

Handholding a model via prompt engineering to lead the LLM to a correct conclusion is not how intelligence should work

kenshing9000 ✅ @kens... · 26 Jun
The show is to states

mattparlmer 🌎 ·
@mattparlmer

Have been commenting more about AGI discourse over the last few months, and especially over the last few days

It's important that a wide range of people be involved in this discourse, not just a priesthood that hyperfocuses on preventing certain

Andrej Karpathy ✅ ·
@karpathy

It's a bit sad and confusing that LLMs ("Large Language Models") have little to do with language; It's just historical. They are highly general purpose technology for statistical modeling of token streams or something. Their name would be Autoregressive Transformers or something.

They don't care if the tokens happen to represent little text chunks. It could just as well be little image patches, audio chunks, action choices, molecules, or whatever. If you can reduce your problem to that of modeling token streams (for any arbitrary vocabulary of some set of discrete tokens), you can "throw an LLM at it".

Actually, as the LLM stack becomes more and more mature, we converge of a large number of problems into this model. That is, the problem is fixed at that of "next word". That is, the usage/meaning of the tokens is also possible. It's also possible to do what's e. What's 'bit'.

Ezra 'God' Olubi ✅ ·
@0x

Follow ...

my communication style has a bias for dramatic but compressed enunciation, and i love it.

pandering to a growing haste in attributing vividly descriptive language to a reliance on large language models implies a regression to the mean.

i will not be doing that.



Yann LeCun
@ylecun

...



You are confusing intelligence and knowledge.
LLMs have a lot of accumulated knowledge, but very little intelligence.
An elephant or a 4 year old are way smarter than any LLM.

9:36 AM · 2/20/24 From Earth · 16K Views

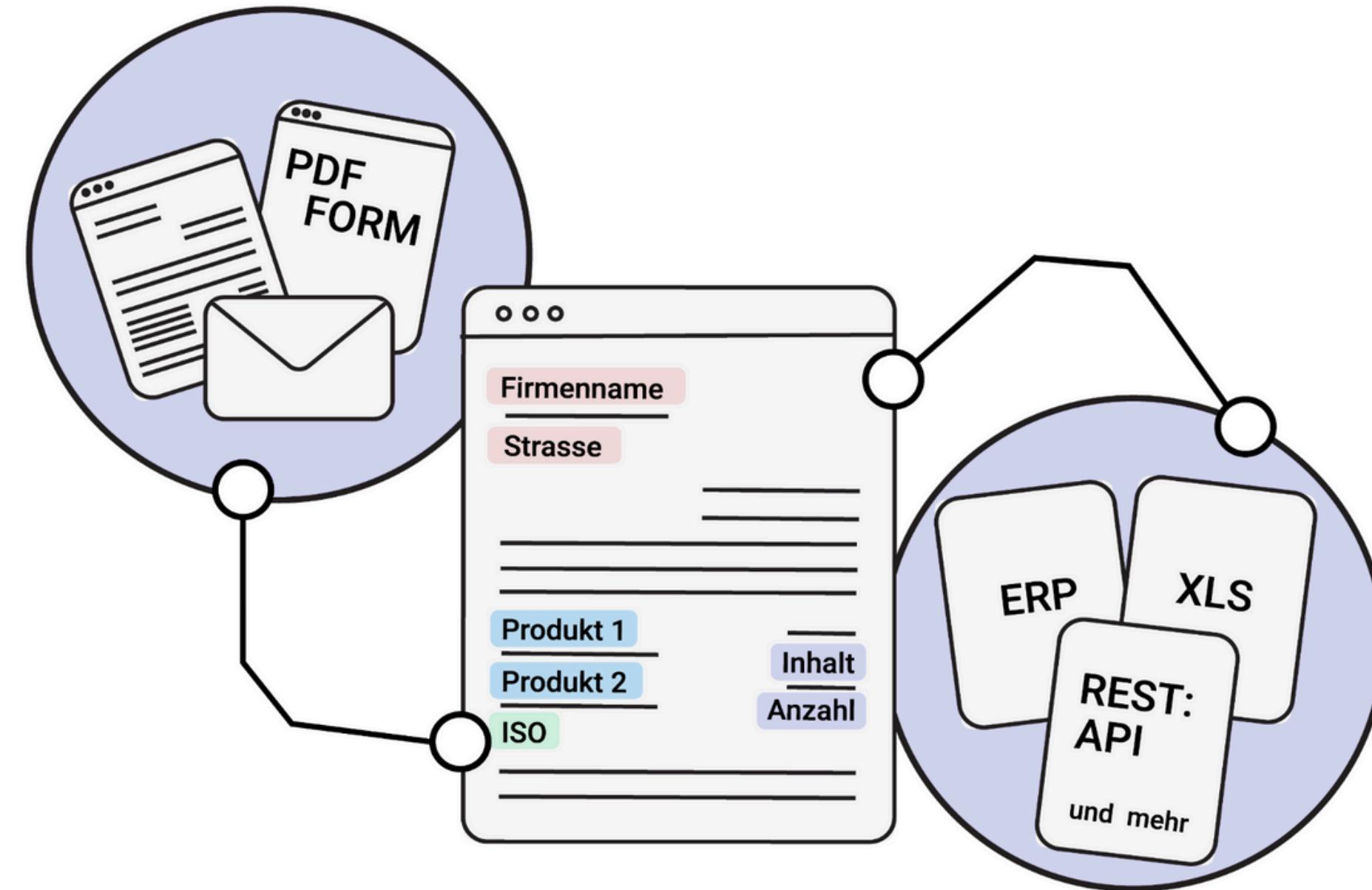
27 Reposts **2** Quotes **304** Likes **32** Bookmarks

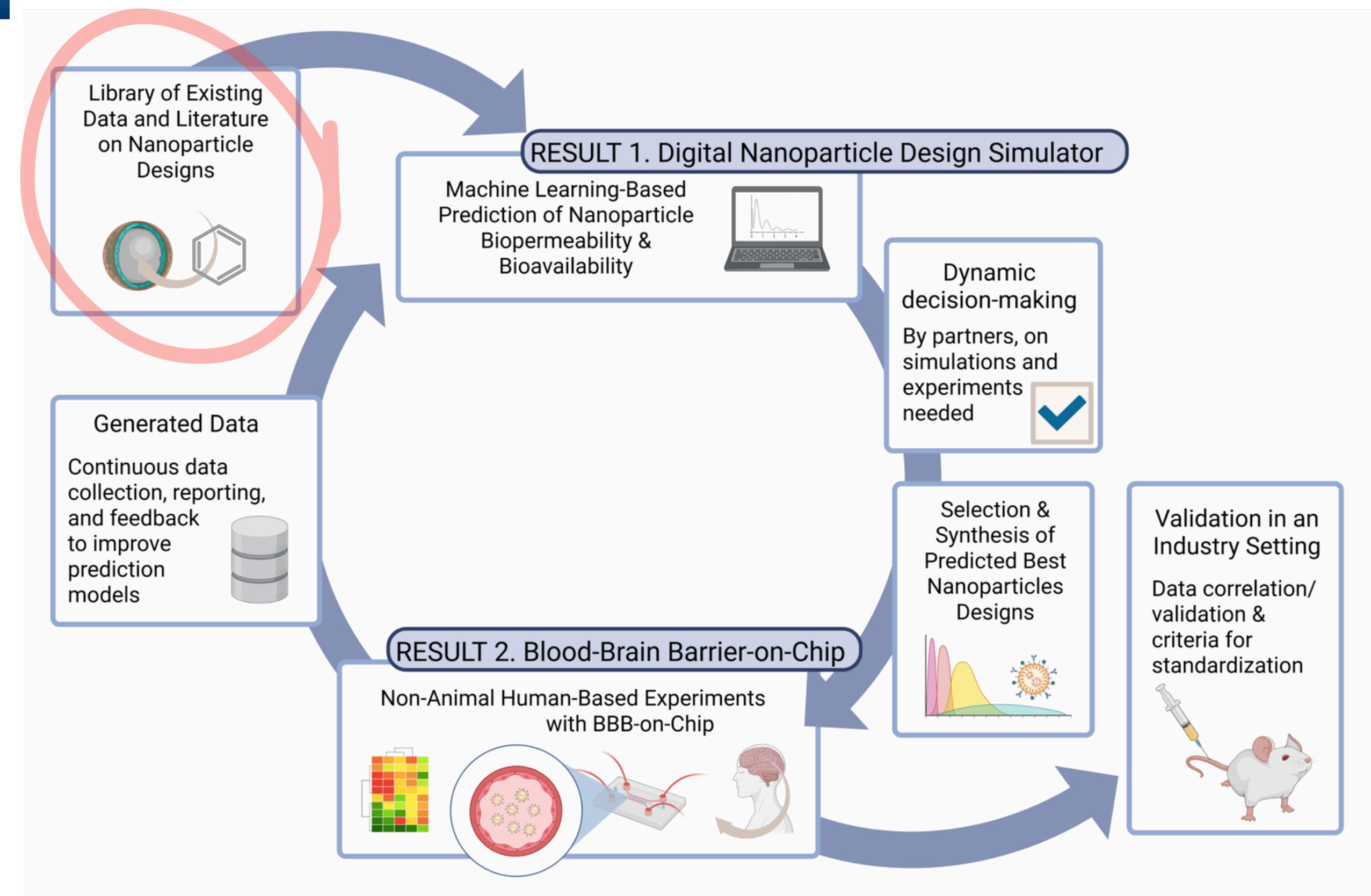




How do we, as researchers, tap into the "blessings" of LLMs?

Automatic Information Extraction





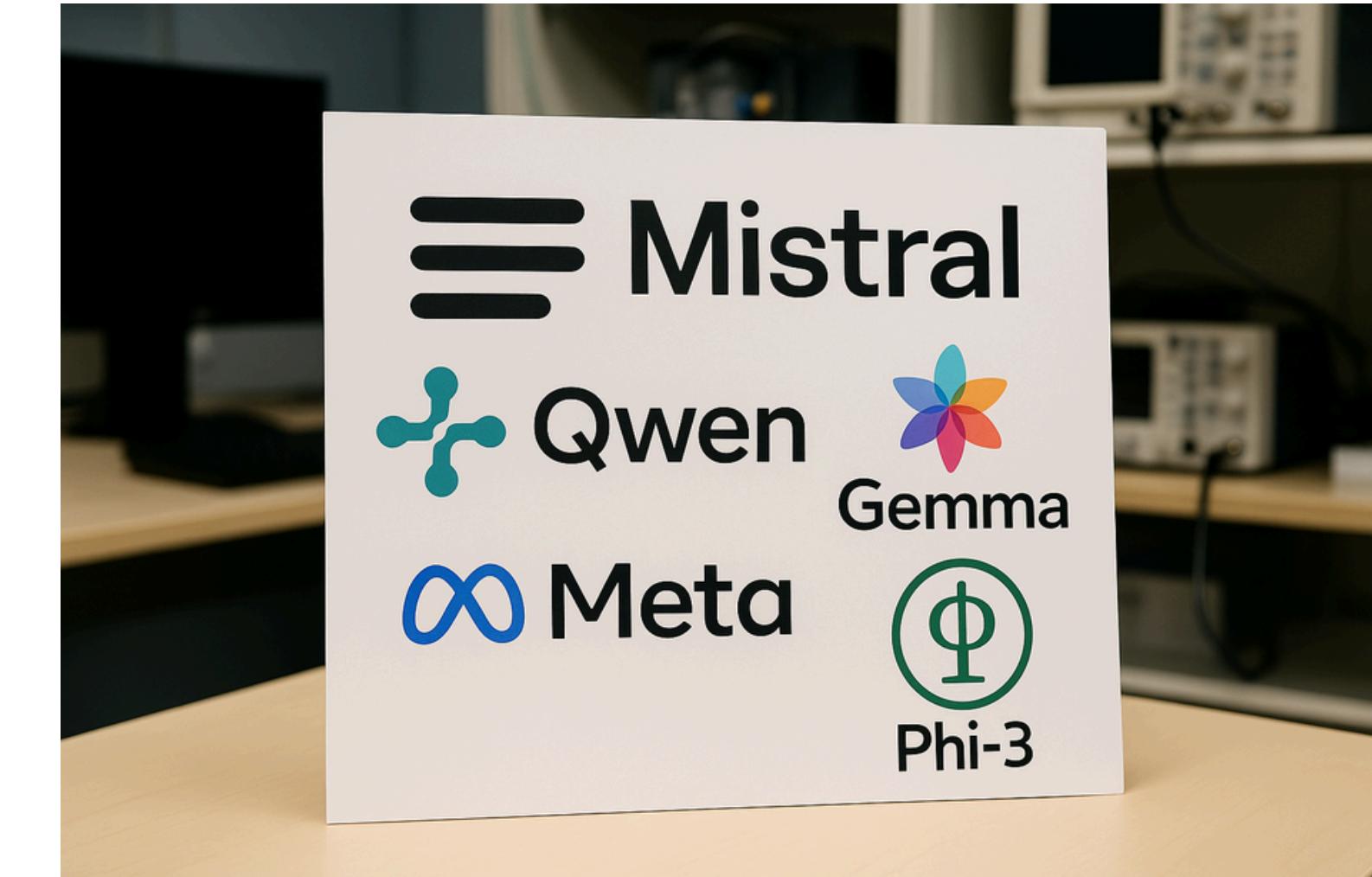


**Large, closed-source
LMs are well established**

Dare to be different!



**Large, closed-source
LMs are well established**



**Small, open-source LMs
are catching up!**



How can we get small, open-source/open-weight LMs to operate at the level of their large, closed-source counterparts?



Be strategic!





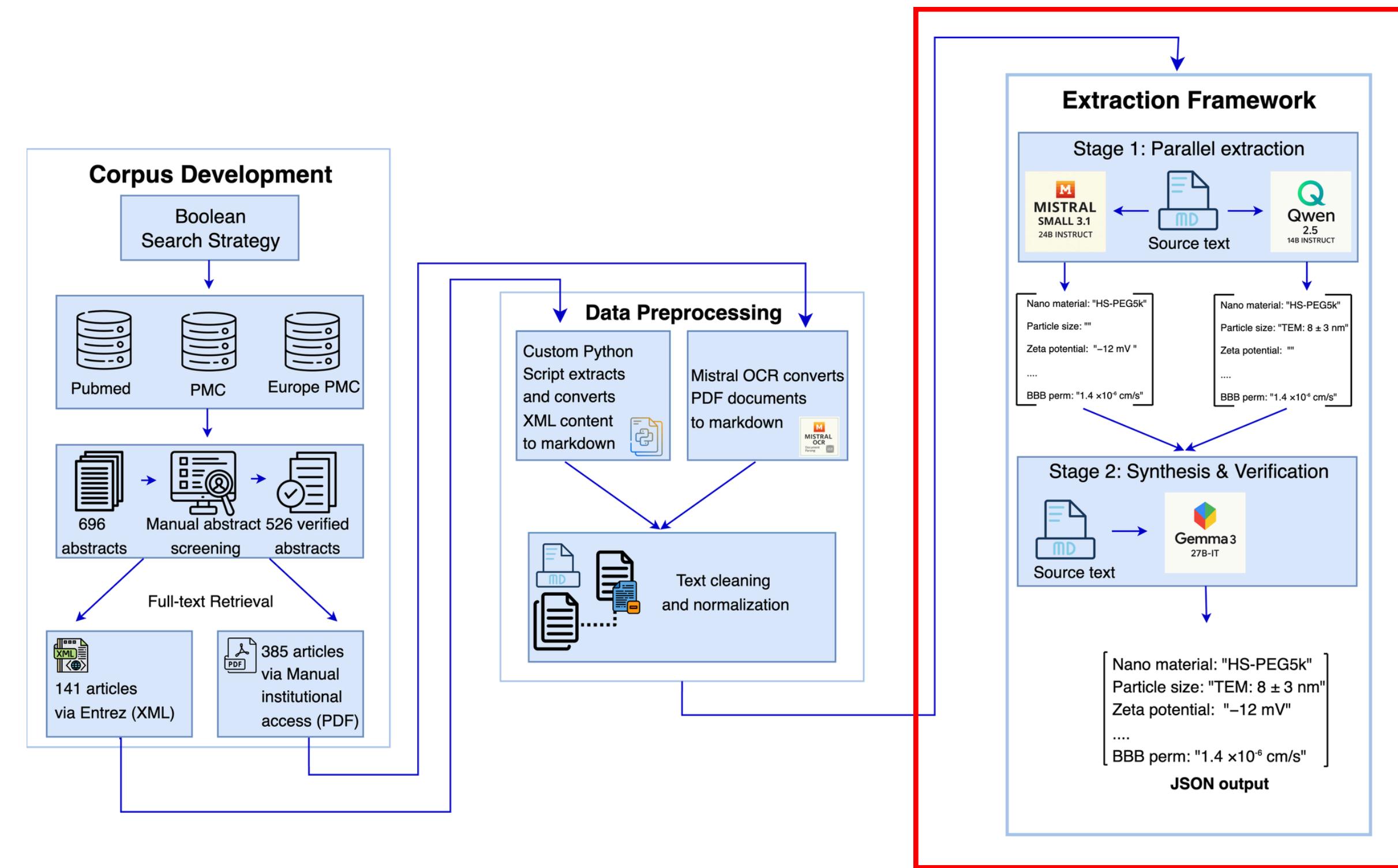
Be strategic!

"Two heads are better than one"



Be strategic!

"Two heads are better than one"



Be strategic!



Go buy me bread

Be strategic!



Go buy me bread



Go buy me bread for sandwich

Be strategic!



Go buy me bread



Go buy me bread for sandwich



Go buy me "Sandwich bread" for sandwich



Be strategic!

Context engineering > prompt engineering





Be strategic!

Context engineering > prompt engineering

 **Andrej Karpathy** ✅ @karpathy · Jun 25

+1 for "context engineering" over "prompt engineering".

[Show more](#)

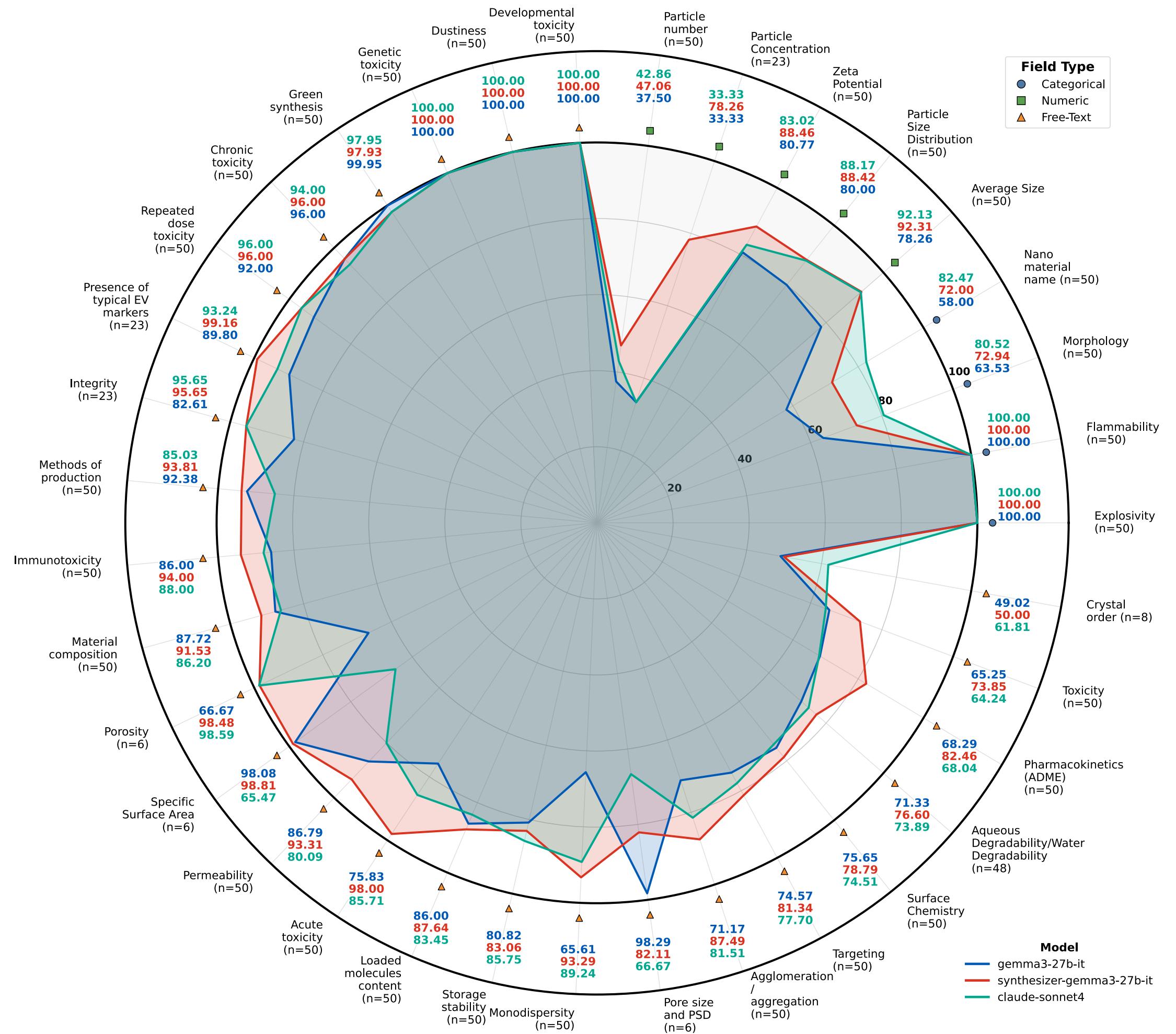
 **tobi lutke** ✅ 💼 @tobi · Jun 19

I really like the term “context engineering” over prompt engineering.

It describes the core skill better: the art of providing all the context for the task to be plausibly solvable by the LLM.

533 2.6K 14K 2.2M ⏵ ⏵

Results





Challenges



- **External factors-induced non-deterministic behavior of LMs: Reproducibility at stake?**

Challenges

- **External factors-induced non-deterministic behavior of LMs: Reproducibility at stake?**
- **Lack of discourse-level understanding of text: Task-dependent**



Conclusion



With the right strategies, we can get small, open-source LMs to extract information at the performance level of large, closed-source LMs



Tack!

Any questions?