[AI-PHI] 8TH SESSION
AEMOTIONAL UNDERSTANDING

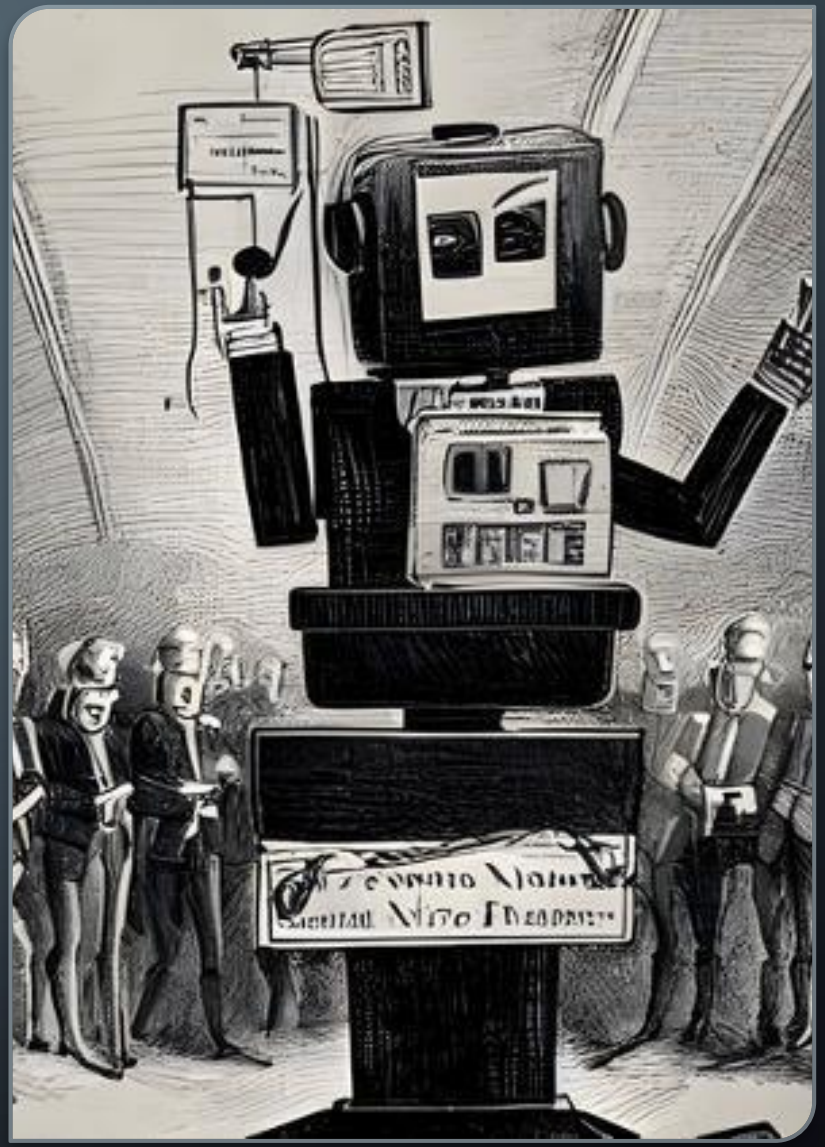
🤖❤️‍🔥

by Constant Bonnard & Gustave Cortal

18/01/2023

FORTN[AI]GHTLY NEWS

1. Ferret MLLM
2. IMF: AI will affect 40% of jobs
3. Mamba LLM
4. OpenAI: Impossible to train models without using copyrighted data



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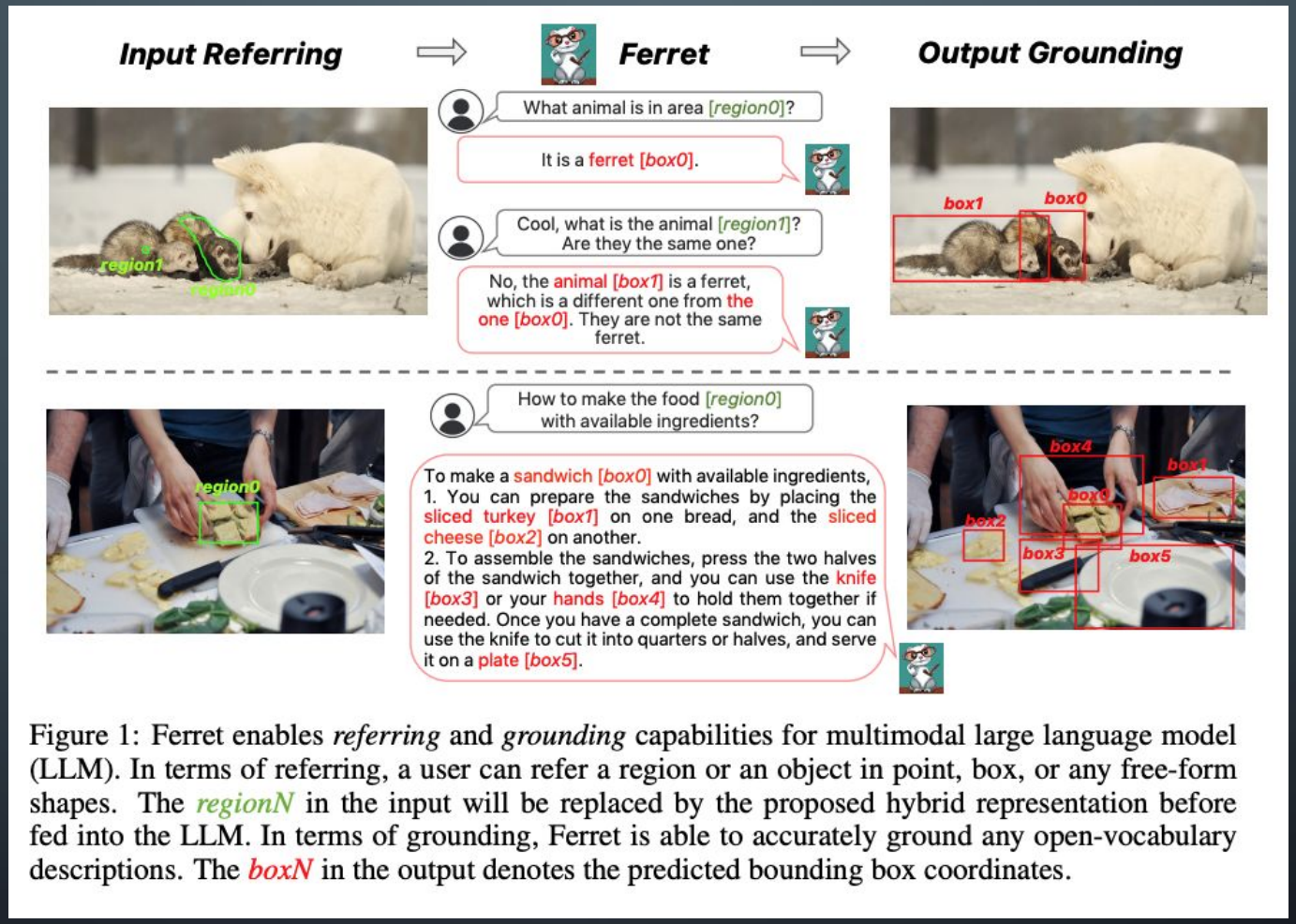

Figure 1: Ferret enables *referring* and *grounding* capabilities for multimodal large language model (LLM). In terms of referring, a user can refer a region or an object in point, box, or any free-form shapes. The *regionN* in the input will be replaced by the proposed hybrid representation before fed into the LLM. In terms of grounding, Ferret is able to accurately ground any open-vocabulary descriptions. The *boxN* in the output denotes the predicted bounding box coordinates.

Ferret: Refer and Ground Anything Anywhere at Any Granularity

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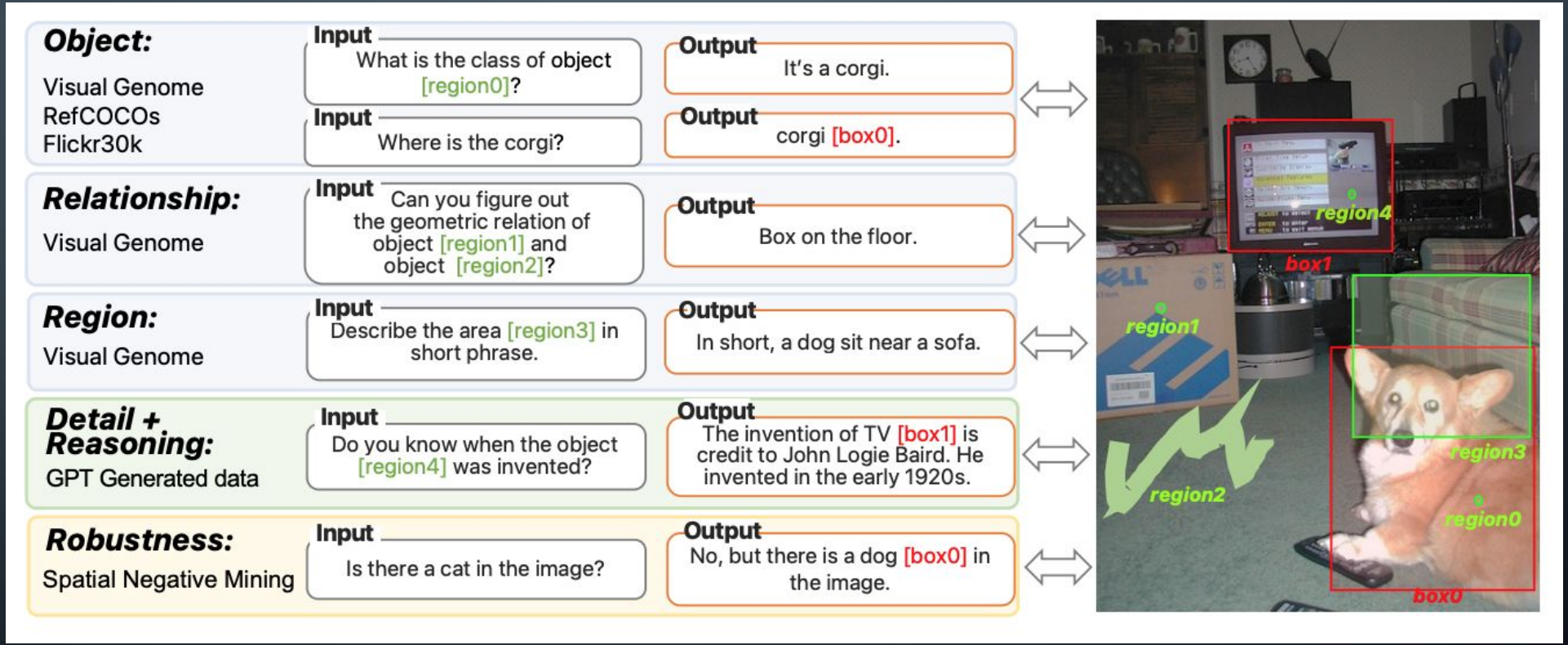
GRIT, a **G**round-and-**R**efer **I**nstruction-**T**uning dataset with 1.1M samples



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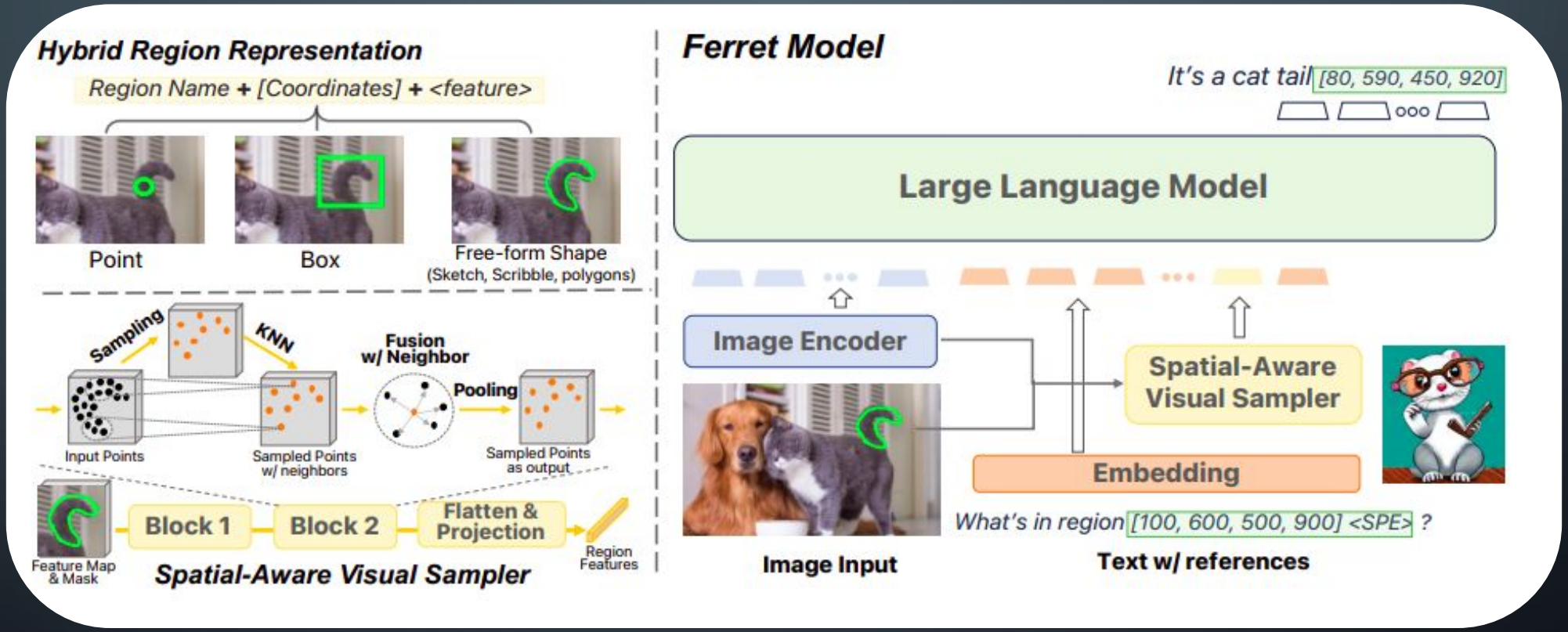

Ferret: Refer and Ground Anything Anywhere at Any Granularity

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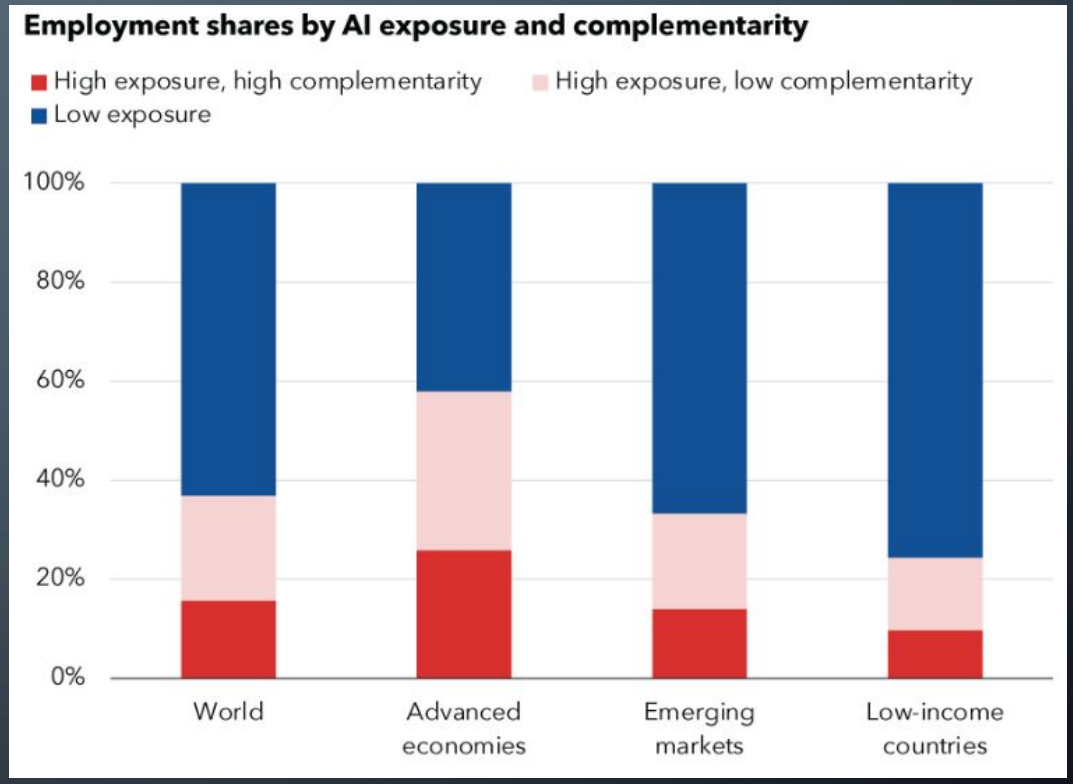
IMF: AI will affect almost 40 percent of jobs around the world, replacing (completely or lower demand) some and complementing others.



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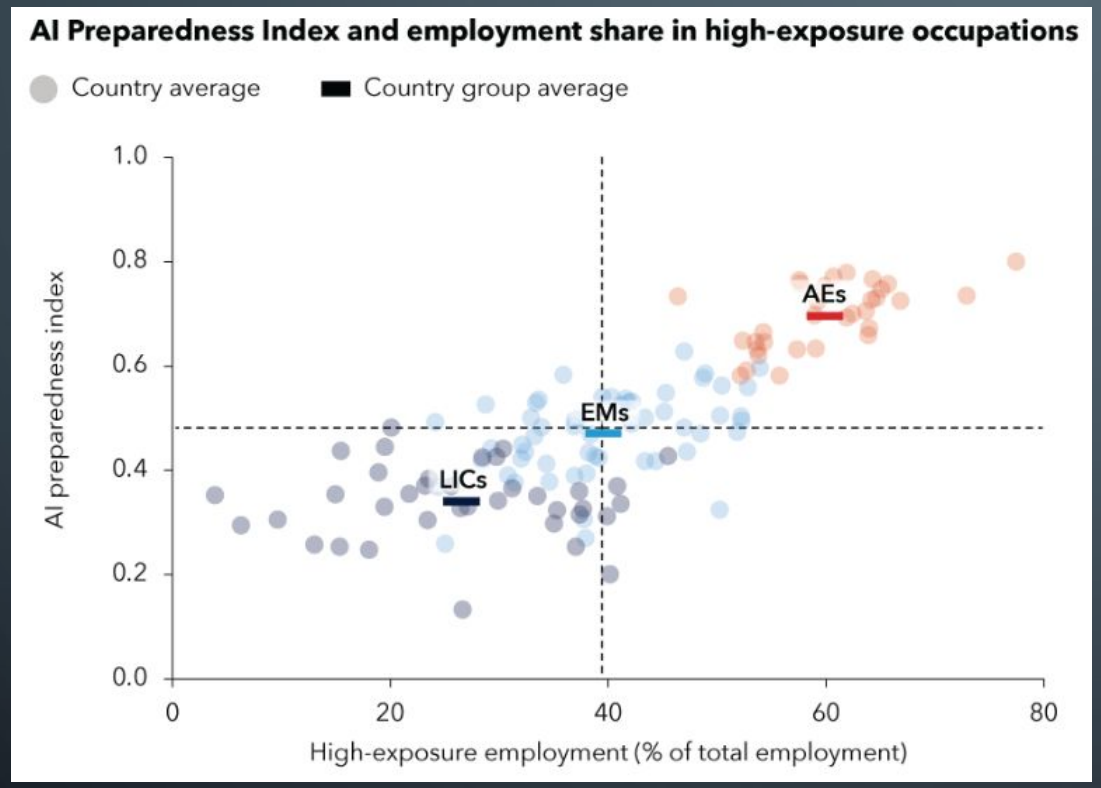

Wealthier economies, including advanced and some emerging market economies, tend to be better equipped for AI adoption than low-income countries.

IMF: AI will affect almost 40 percent of jobs around the world

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Polarization within income brackets, with workers who can harness AI seeing an increase in their productivity and wages. For example, younger workers can enhance their productivity more quickly. Increased Inequality.

Many countries don't have the infrastructure or skilled workforces to harness the benefits of AI. Increased inequality.

If AI significantly complements higher-income workers, it may lead to a disproportionate increase in their labor income. Increased inequality.

Recommendation: It is crucial for countries to establish comprehensive social safety nets and offer retraining programs for vulnerable workers.

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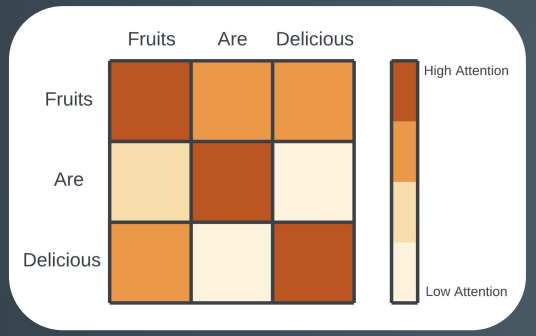
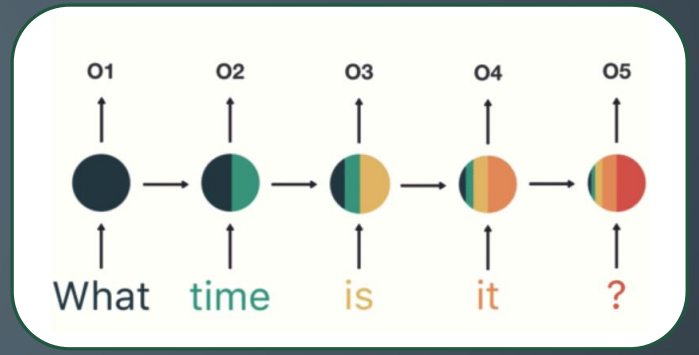
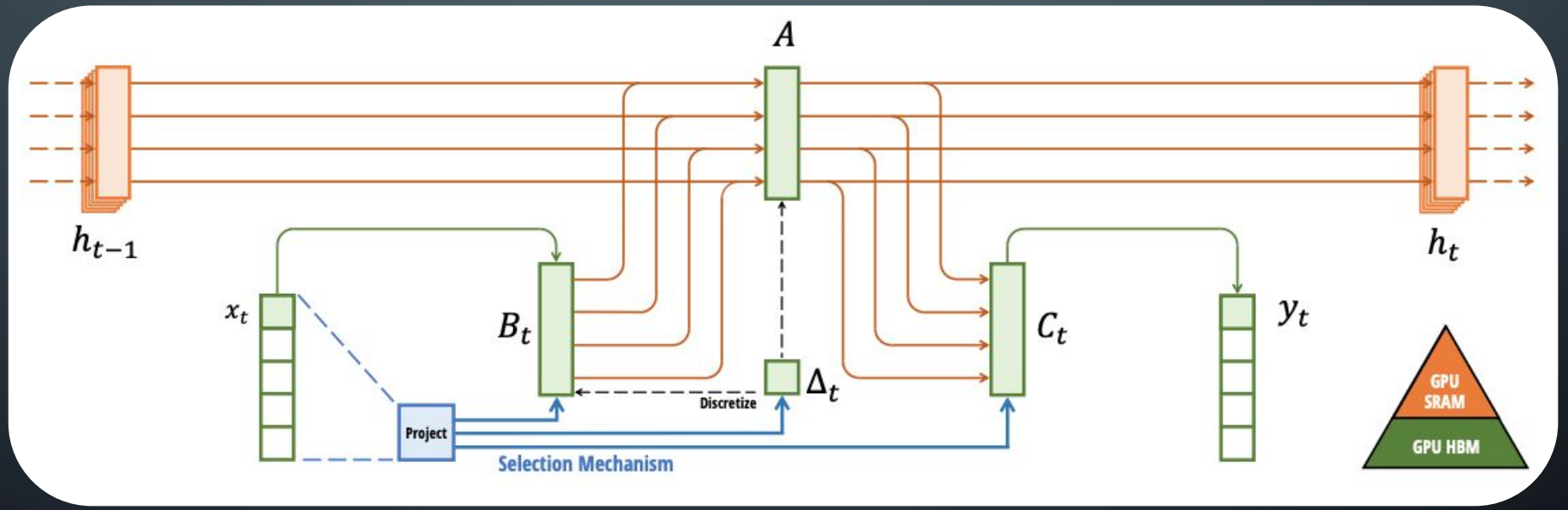


Quadratic Attention



RNN



Selective Structured State Space Model

Mamba: Linear-Time Sequence Modeling with Selective State Spaces

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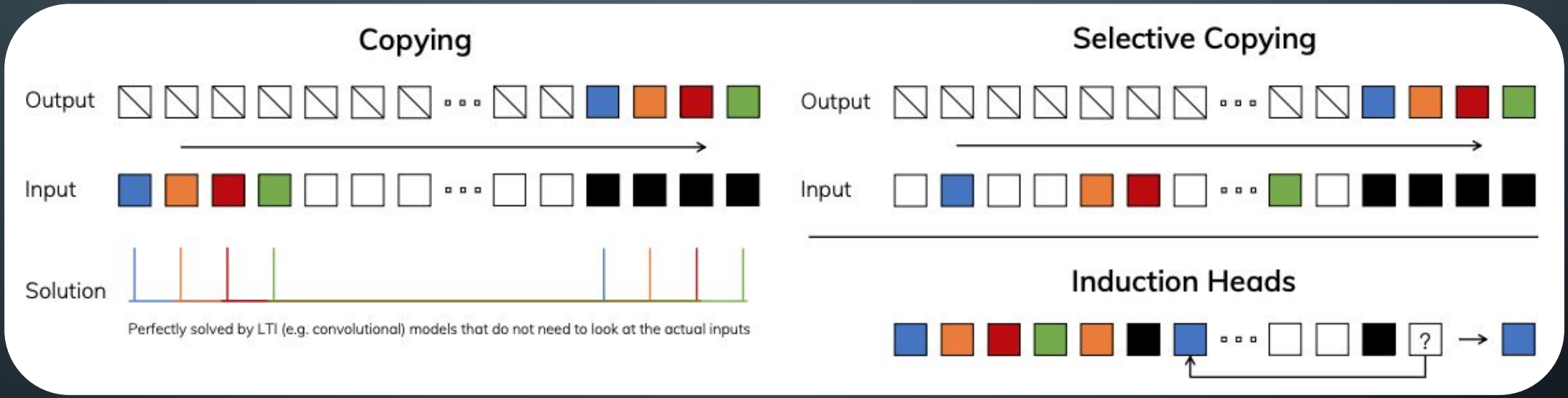
Non-selective is enough

Requires Selective Input



E.g. predict 'Potter' given 'Harry'

Mamba: Linear-Time Sequence Modeling with Selective State Spaces

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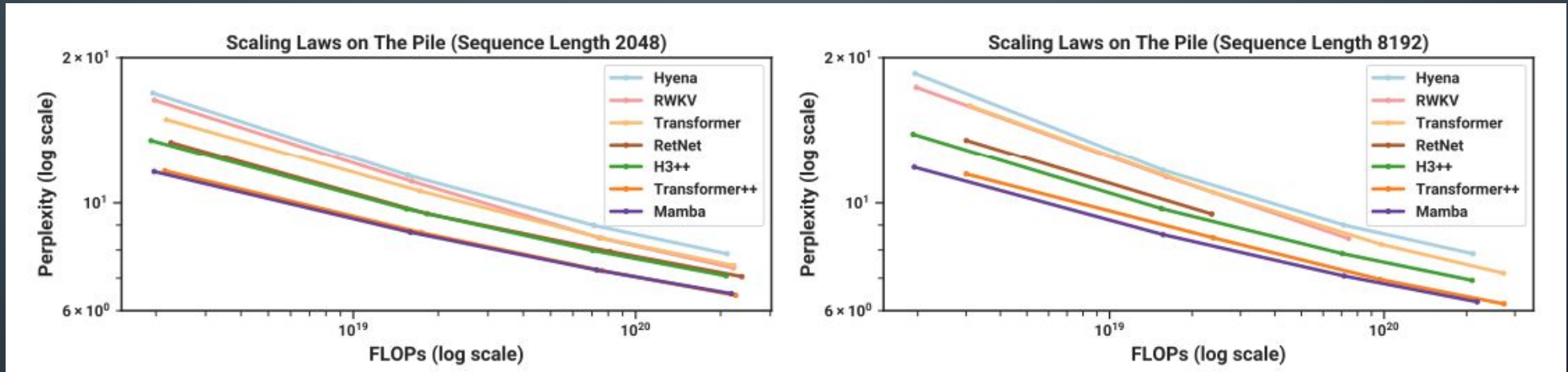

Figure 4: (**Scaling Laws.**) Models of size ≈ 125M to ≈ 1.3B parameters, trained on the Pile. Mamba scales better than all other attention-free models and is the first to match the performance of a very strong "Transformer++" recipe that has now become standard, particularly as the sequence length grows.

Linear scaling with input (instead of quadratic with attention)

5x inference speed up with hardware-aware recurrence calculations

Mamba: Linear-Time Sequence Modeling with Selective State Spaces

FORTN[AI]GHTLY NEWS

Submitted to House of Lords Communications and Digital Select Committee inquiry: Large language models

"copyright today covers virtually every sort of human expression including blog posts, photographs, forum posts, scraps of software code, and government documents–it would be impossible to train today's leading AI models without using copyrighted materials"

"we've led on websites' ability to exclude their content and we provide an easy way to disallow for our "GPTBot" web crawler to access a site, as well as an opt-out process for creators who want to exclude their images from future DALL·E training datasets"

"find mutually beneficial arrangements to gain access to materials that are otherwise inaccessible, and also to display content in ways that go beyond what copyright law otherwise allows"

OpenAI: Impossible to train language models using non-copyrighted data

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