

**Carnegie
Mellon
University**
Libraries

The Imperative of Openness in AI

DIGHUM Lecture

February 24, 2026

Sayed Choudhury

Associate Dean for Digital Infrastructure

Associate Dean for Research

Director of Open Source Programs Office (OSPO)

Executive Director of Open Forum for AI (OFAI)

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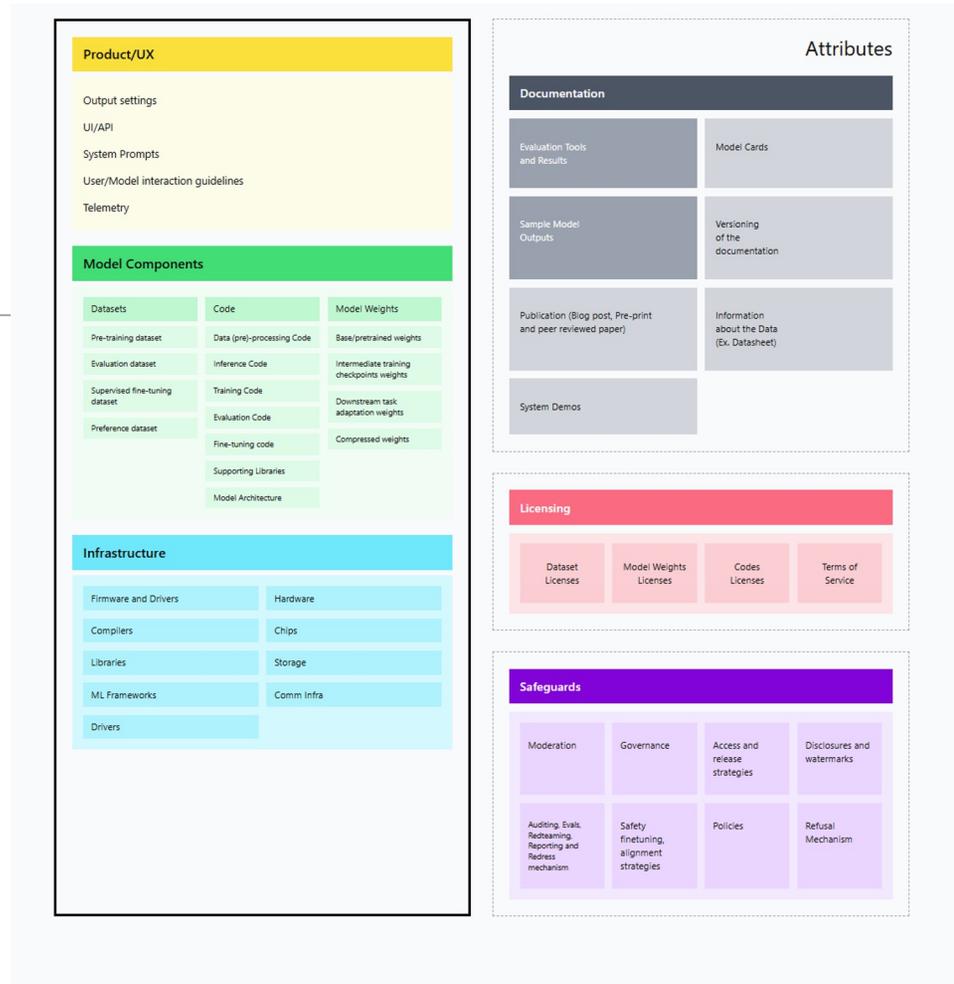
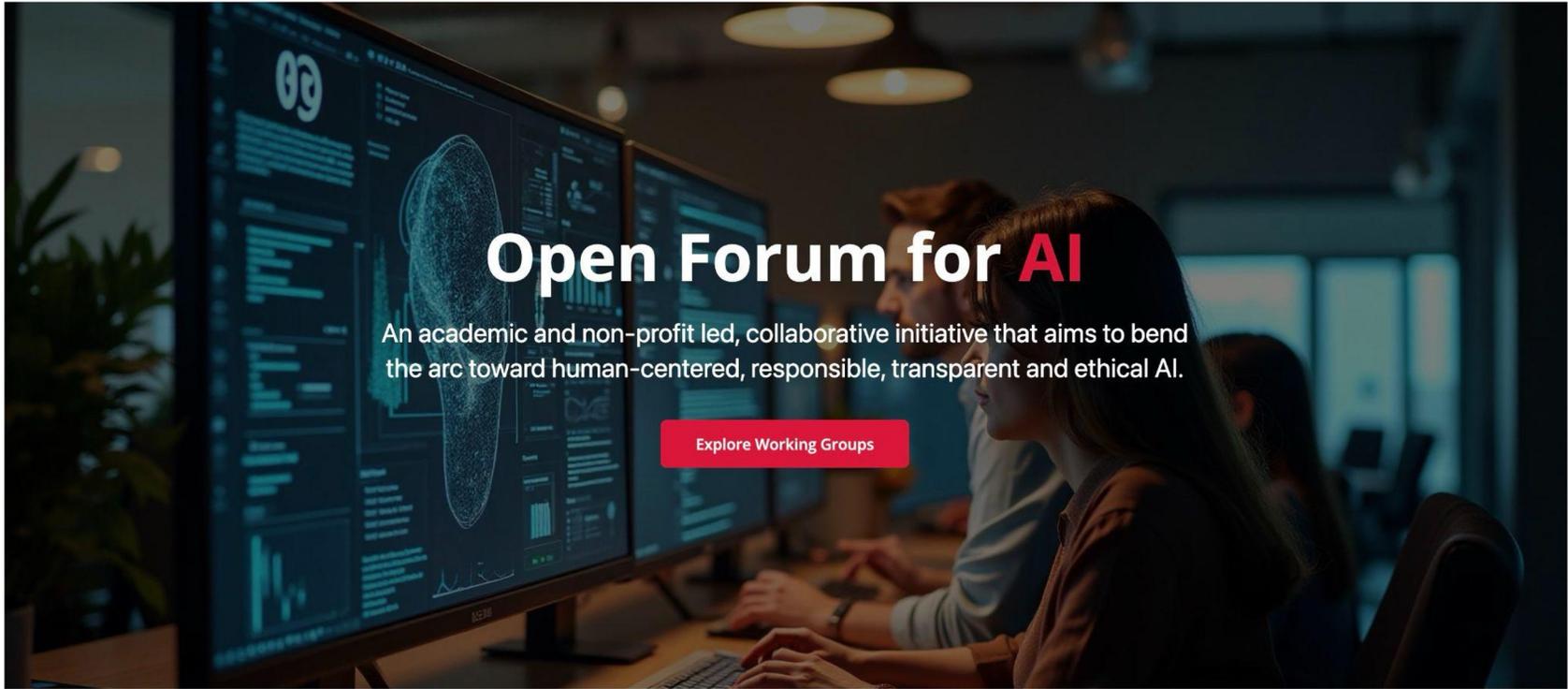


Figure 1 in <https://arxiv.org/pdf/2405.15802>



Open Forum for AI

An academic and non-profit led, collaborative initiative that aims to bend the arc toward human-centered, responsible, transparent and ethical AI.

[Explore Working Groups](#)

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Working Groups

OFAI's work spans eight interconnected working groups, each contributing to our mission of responsible AI development and ensuring AI serves the common good through collaborative innovation.

Research



Exploring how open and equitable approaches to AI can support economic resilience, strengthen public infrastructure, and advance social equity.

KEY HIGHLIGHTS

- 6 Research Themes covering AI equity, public infrastructure, and governance
- Interdisciplinary approach combining computer science, economics, and social science
- Applied research embedded in real-world contexts like cities and public services

[Explore Research Themes](#) 

Technical Prototypes



Developing collaborative prototypes that demonstrate responsible AI implementation through transparent, community-driven innovation.

KEY HIGHLIGHTS

- Open Source AI Definition compliance ensures accessibility and reusability
- Living laboratory for testing, sharing, and scaling new ideas
- Community-driven innovation with academic and non-profit partners

[View Our Prototypes](#) 



 **Policy Recommendations**  **Katie Steen-James**
Policy Lead 

Crafting AI policy frameworks that preserve innovation while advancing equity, accountability, and openness in AI development.

KEY HIGHLIGHTS

- Multi-dimensional frameworks balancing risk, capability, and deployment context
- Policy recommendations bridging US & EU sectors
- Evidence-led policy using OFAI's technical prototypes as real-world examples

[Find Out More](#) 

 **Talent & Workforce**  **Rachel Dzombak**
Talent and Workforce Lead 

Preparing a workforce equipped with technical, strategic, and ethical skills required to guide AI for public good.

KEY HIGHLIGHTS

- Open curriculum development with Carnegie Mellon University partnership
- Skills frameworks for AI-augmented workers, practitioners, and innovators
- Focus on equity and access across geographies and communities

[Find Out More](#) 

 **The OFAI Network**  **Deb Bryant**
OFAI Network Lead 

A coordination and collaboration forum for organisations and individuals working on openness in AI supporting practical progress toward open and

 **Data Working Group**  **Sayeed Choudhury**
Interim Lead 

The Data Working Group will bring together diverse and necessary expertise and perspectives to comprehensively represent a range of global stakeholders



Library Advisory Group



Natalie Meyers
Library Advisory Group Lead 

Working with library professionals and information scientists to share collective learnings and ensure AI supports community values.

KEY HIGHLIGHTS

- Bringing together experiences from AI and library science to generate shared insights.
- Supporting equitable access to knowledge, tools, and resources.
- Strengthening community-driven approaches to how AI is understood and used.

Coming Soon



Exploratory Technical Group



Vincent Sha
Exploratory Technical Lead 

Investigating the implications of emerging technologies such as MCP in research and practice, while providing a collaborative space for technical expertise and knowledge exchange.

KEY HIGHLIGHTS

- Collaborative forum for sharing and advancing technical expertise
- Connecting with academic, industry, and community perspectives to inform innovation
- Exploration of MCP and other emerging technologies in research contexts

Coming Soon



BRAC University
International Partner



Carnegie Mellon University
Lead Institution



George Washington University
Research Partner



Georgia Institute of Technology
Research Partner



Institute for Advanced Study (Paris)
International Partner



North Carolina Agricultural & Technical State University
Research Partner



University of Texas at Austin
Research Partner



**Alliance for Responsible Data Collection**
Data
Governance

**Atlantic Council**
Policy Research

**Community Forge**
Community Building

**Conscience**
Ethical AI

**Creative Commons**
Digital Commons

**Open Source Initiative**
Open Innovation

**OpenMined**
Privacy-Preserving AI

OFAI Fellows

Providing expertise from both the private and public sector



Anik Bose
General Partner
at BGV Capital



Jordan Usdan
AI Strategist at
Microsoft



Justin Fanelli
US Navy /
Georgetown
University



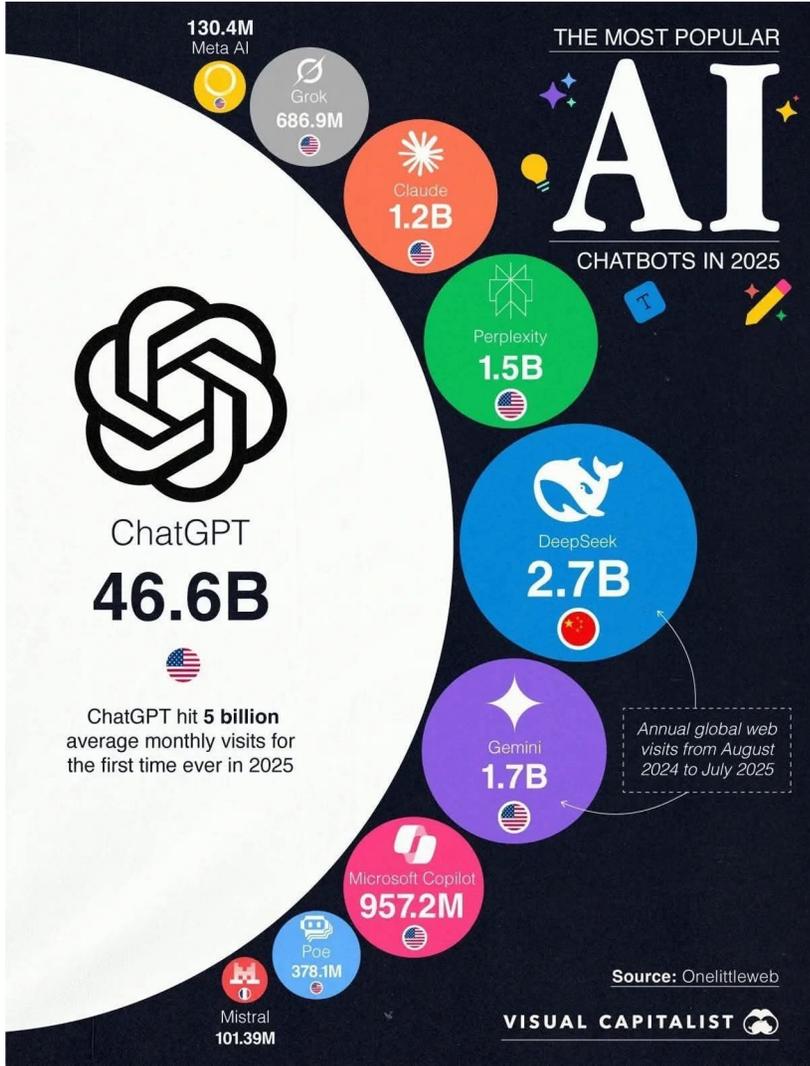
Michelle Fang
Former Fellow
Former
Strategist at
Cerebras
Systems



Mike Linksvayer
Head of
Developer Policy
at GitHub

Openness in AI Framework

- Socio-technical framework, developed with community engagement, that rigorously defines openness and the ensuing or corresponding value
- Move from open source to open governance (transparency, sovereignty, agency, etc.)
- Need to consider specific context and use case with emphasis on the Ws of Why, What, Who, Whom, When, and Where

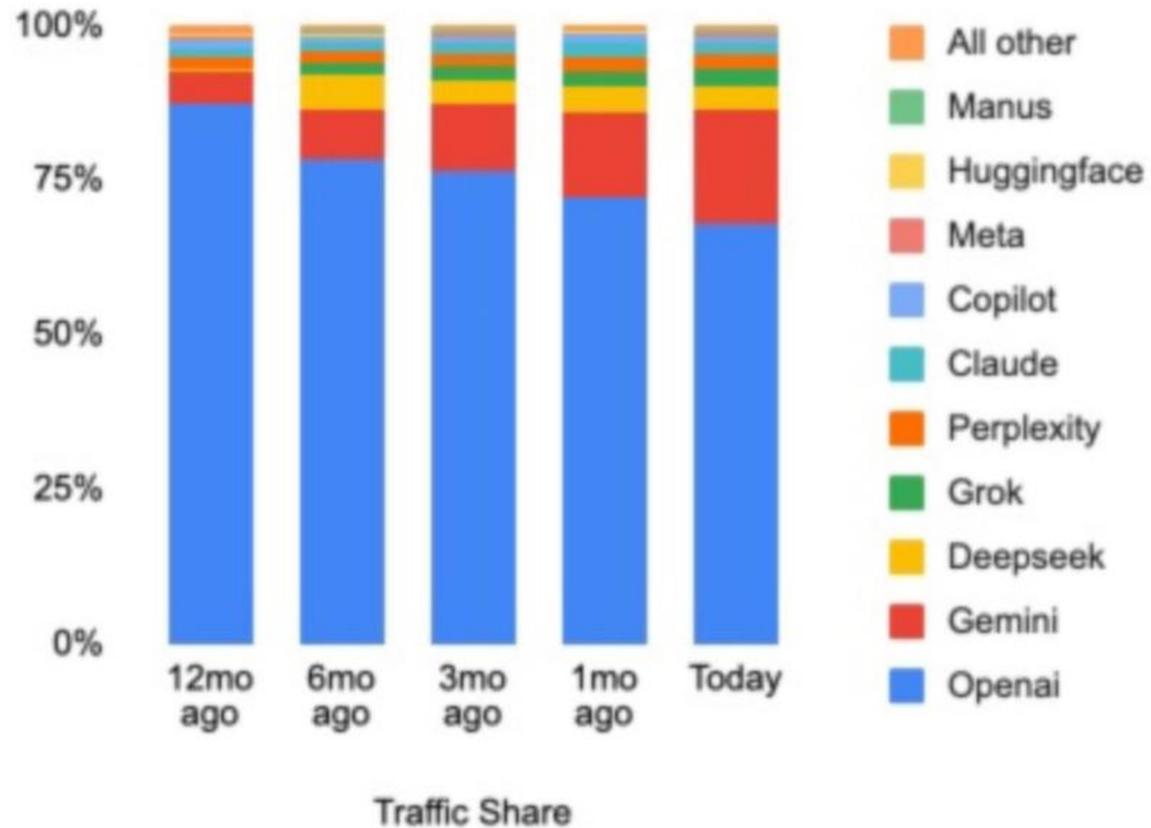


US "AI Dominance"



Generative AI Traffic Share

similarweb



Carnegie Mellon University



huggingface.co/models

Main Tasks Libraries Languages Licenses Other

Tasks

- Text Generation Any-to-Any
- Image-Text-to-Text Image-to-Text
- Image-to-Image Text-to-Image
- Text-to-Video Text-to-Speech + 44

Parameters

< 1B 6B 12B 32B 128B > 500B

Libraries

- PyTorch TensorFlow JAX
- Transformers Diffusers
- sentence-transformers Safetensors
- ONNX GGUF Transformers.js
- MLX MLX + 41

Apps

- vLLM llama.cpp MLX LM
- LM Studio Ollama Jan
- Draw Things + 7

Models 2,645,425 Filter by name Full-text search Inference Available Sort: Trending

- Qwen/Qwen3.5-397B-A17B**
Image-Text-to-Text · 403B · Updated about 11 hours ago · 303k · 934
- nvidia/personalex-7b-v1**
Audio-to-Audio · Updated 8 days ago · 539k · 2.17k
- zai-org/GLM-5**
Text Generation · 754B · Updated 10 days ago · 179k · 1.47k
- Nanbeige/Nanbeige4.1-3B**
Text Generation · 4B · Updated 2 days ago · 178k · 749
- MiniMaxAI/MiniMax-M2.5**
Text Generation · Updated 8 days ago · 209k · 876
- xgen-universe/Capybara**
Any-to-Any · Updated about 24 hours ago · 163
- TeichAI/Qwen3-14B-Claude-4.5-Opus-High-Reasoning-Distill-GGUF**
Text Generation · 15B · Updated 1 day ago · 19.4k · 164
- Qwen/Qwen3-TTS-12Hz-1.7B-CustomVoice**
Text-to-Speech · Updated 26 days ago · 1.01M · 1.16k
- moonshotai/Kimi-K2.5**
Image-Text-to-Text · 171B · Updated 19 days ago · 1.19M · 2.09k



huggingface.co/models?sort=likes

Main Tasks Libraries Languages Licenses Other

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- + 41

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- llama.cpp
- MLX LM
- LM Studio
- Ollama
- Jan
- Draw Things
- + 7

Models 2,645,447 Filter by name Full-text search Inference Available Sort: Most likes

- deepseek-ai/DeepSeek-R1**
Text Generation • Updated Mar 27, 2025 • ↓ 656k • ⚡ • ❤️ 13k
- black-forest-labs/FLUX.1-dev**
Text-to-Image • Updated Jun 27, 2025 • ↓ 689k • ⚡ • ❤️ 12.3k
- stabilityai/stable-diffusion-xl-base-1.0**
Text-to-Image • Updated Oct 30, 2023 • ↓ 2.08M • ⚡ • ❤️ 7.47k
- CompVis/stable-diffusion-v1-4**
Text-to-Image • Updated Aug 23, 2023 • ↓ 629k • ❤️ 6.98k
- meta-llama/Meta-Llama-3-8B**
Text Generation • ... 8B • Updated Sep 27, 2024 • ↓ 1.75M • ⚡ • ❤️ 6.46k
- hexgrad/Kokoro-82M**
Text-to-Speech • Updated Apr 10, 2025 • ↓ 8.98M • ⚡ • ❤️ 5.75k
- meta-llama/Llama-3.1-8B-Instruct**
Text Generation • Updated Sep 25, 2024 • ↓ 5.95M • ⚡ • ❤️ 5.49k
- openai/whisper-large-v3**
Automatic Speech Recognition • Updated Aug 12, 2024 • ↓ 6.21M • ⚡ • ❤️ 5.41k
- bigscience/bloom**
Text Generation • ... 176B • Updated Jul 28, 2023 • ↓ 3.24k • ❤️ 4.99k

The ATOM Project

Towards fully open models for US research & industry

[Sign Your Support](#) [▶ 5 Min. Walkthrough](#) [↓ Executive Summary](#) [🔊 Listen to This](#)

Reinvigorating AI research in the U.S. by building leading, open models at home

America's AI leadership was built by being the global hub and leading producer of open AI research, research which led directly to innovations like the Transformer architecture, ChatGPT, and the latest innovations in reasoning models and agents. America is poised to lose this leadership to China, in a period of geopolitical uncertainty and rising tensions between these two nations. America's best AI models have become more closed and restricted, while Chinese models have become more open, capturing substantial market share from businesses and

Global Model Momentum

Open models from China are set to overtake the US in the near future, as downloads surge in usage across [HuggingFace](#). The American ecosystem has stalled in growth, and the "flip" is **happening right now**.

Models Worldwide

Cumulative Downloads, 2023- present





ATOM: American Truly Open Models

Sign Your Support

We need your support to build American Truly Open Models and to ensure that the United States maintains its lead in AI. Sign here to lend your support to the ATOM Project:

Full Name

Dr. Jane Smith

Email Address

jane.smith@university.edu

Position/Title

Professor of Computer Science, Stanford University

Send me project updates by email (required)

Sign On to Support

By signing, you agree to have your name and title displayed publicly as a supporter. We will not share your personal information with third parties without your consent.

Notable Signatories

Clement Delangue
CEO of Hugging Face

Jeremy Howard
Co-founder of Fast.ai & Answer.ai

Oleksii Kuchaiev
Director of Applied Research at Nvidia

Ross Taylor
CEO of General Reasoning

Sebastian Raschka
Author of Build A Large Language Model (From Scratch)

Soumith Chintala
Co-founder of PyTorch

Miles Brundage
Former Head of Policy Research at OpenAI

Ali Farhadi

Carnegie Mellon University

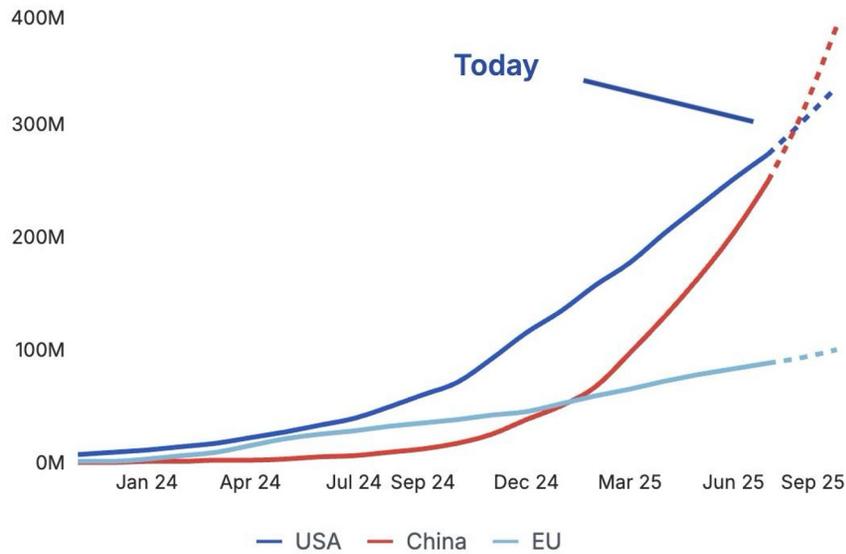


Global Model Momentum

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Models Worldwide

Cumulative Downloads, 2023- present



The ATOM Project

source: huggingface

US AI Dominance?

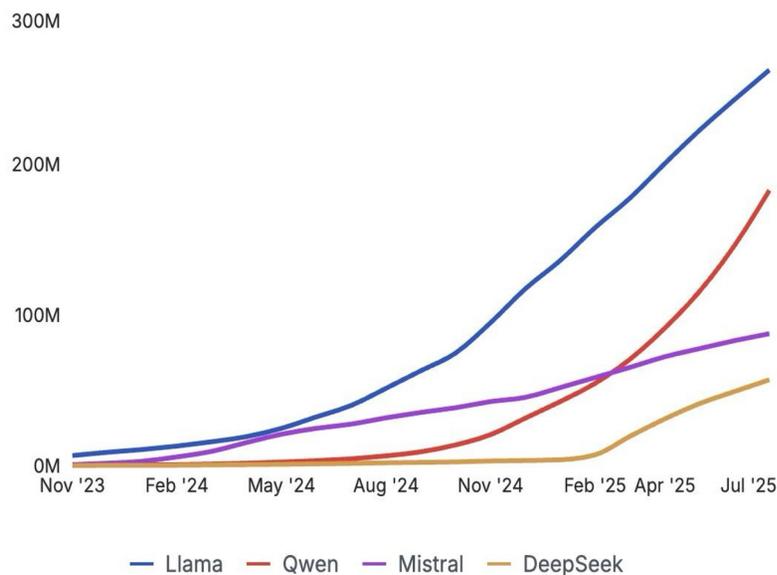
Carnegie Mellon University

China's Model Momentum

Open models from China are set to overtake the US in the near future, as downloads of Qwen surge in usage across HuggingFace.

Catching the Llama

Cumulative Downloads, 2023- present



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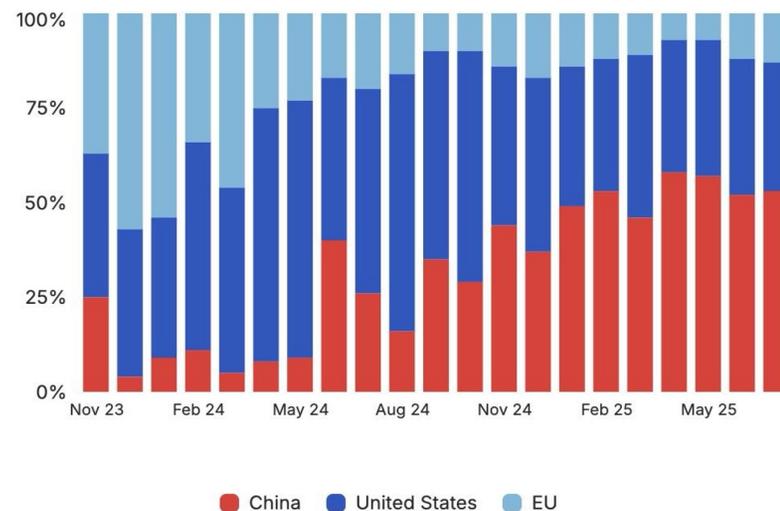
source: huggingface

Model Adoption by Region

Percentage of new finetunes and derivatives released per month by region. Each finetune is logged based on the creator of its base model. Where the U.S. and the E.U. models once dominated, China has taken a clear lead.

Global Regional Model Adoption by Month

Nov 2023 - Jul 2025



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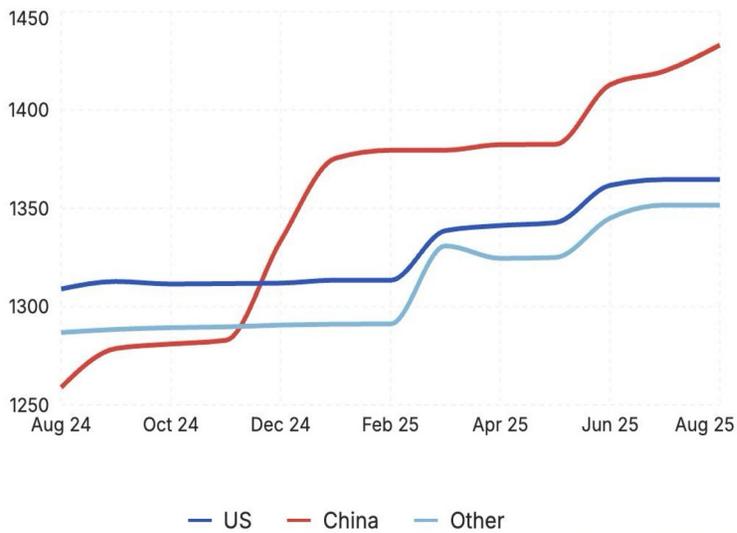
source: huggingface

Community Preference of Open Models

In August of 2024, Chinese open models trailed both the U.S. and the rest of the world, but they quickly overcame this to take a strong lead.

Community Elo Rankings

Monthly performance rankings, Aug 2024 - Jul 2025



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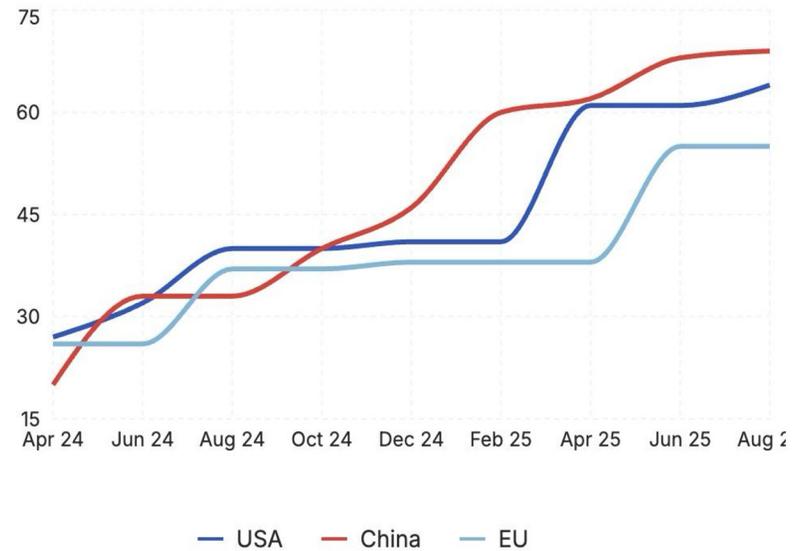
source: Imarena.ai

Best Open Models Over Time

Linear Trend Analysis showing the performance trajectory of open models by region across ArtificialAnalysis benchmarks.

Performance Intelligence Rankings

ArtificialAnalysis Overall Intelligence, Apr 2024 - Aug 2025



The ATOM Project

source: artificial analysis



Small Language Models are the Future of Agentic AI

Peter Belcak¹ Greg Heinrich¹ Shizhe Diao¹ Yonggan Fu¹ Xin Dong¹
Saurav Muralidharan¹ Yingyan Celine Lin^{1,2} Pavlo Molchanov¹
¹NVIDIA Research ²Georgia Institute of Technology
agents@nvidia.com

Abstract

Large language models (LLMs) are often praised for exhibiting near-human performance on a wide range of tasks and valued for their ability to hold a general conversation. The rise of agentic AI systems is, however, ushering in a mass of applications in which language models perform a small number of specialized tasks repetitively and with little variation.

Here we lay out the position that small language models (SLMs) are *sufficiently powerful, inherently more suitable, and necessarily more economical for many invocations in agentic systems, and are therefore the future of agentic AI*. Our argumentation is grounded in the current level of capabilities exhibited by SLMs, the common architectures of agentic systems, and the economy of LM deployment. We further argue that in situations where general-purpose conversational abilities are essential, heterogeneous agentic systems (i.e., agents invoking multiple different models) are the natural choice. We discuss the potential barriers for the adoption of SLMs in agentic systems and outline a general LLM-to-SLM agent conversion algorithm.

Our position, formulated as a value statement, highlights the significance of the operational and economic impact even a partial shift from LLMs to SLMs is to have on the AI agent industry. We aim to stimulate the discussion on the effective use of AI resources and hope to advance the efforts to lower the costs of AI of the present day. Calling for both contributions to and critique of our position, we commit to publishing all such correspondence at research.nvidia.com/labs/lpr/slm-agents.



- **Digital technologies should be designed to promote democracy and inclusion.** This will require special efforts to overcome current inequalities and to use the emancipatory potential of digital technologies to make our societies more inclusive.
- **Privacy and freedom of speech are essential values for democracy and should be at the center of our activities.**
- **Effective regulations, rules and laws, based on a broad public discourse, must be established.** They should ensure prediction accuracy, fairness and equality, accountability, and transparency of software programs and algorithms.
- **Regulators need to intervene with tech monopolies.** It is necessary to restore market competitiveness as tech monopolies concentrate market power and stifle innovation. Governments should not leave all decisions to markets.
- **Decisions with consequences that have the potential to affect individual or collective human rights must continue to be made by humans.** Decision makers must be responsible and accountable for their decisions. Automated decision making systems should only support human decision making, not replace it.
- **Scientific approaches crossing different disciplines** are a prerequisite for tackling the challenges ahead. Technological disciplines such as computer science / informatics must collaborate with social sciences, humanities, and other sciences, breaking disciplinary silos.
- **Universities are the place where new knowledge is produced and critical thought is cultivated.** Hence, they have a special responsibility and have to be aware of that.
- **Academic and industrial researchers must engage openly with wider society and reflect upon their approaches.** This needs to be embedded in the practice of producing new knowledge and technologies, while at the same time defending the freedom of thought and science.
- **Practitioners everywhere ought to acknowledge their shared responsibility for the impact of information technologies.** They need to understand that no technology is neutral and be sensitized to see both potential benefits and possible downsides.
- **A vision is needed for new educational curricula, combining knowledge from the humanities, the social sciences, and engineering studies.** In the age of automated decision making and AI, creativity and attention to human aspects are crucial to the education of future engineers and technologists.
- **Education on computer science / informatics and its societal impact must start as early as possible.** Students should learn to combine information-technology skills with awareness of the ethical and societal issues at stake.



**THIS CIRCLE CONTAINS 50%
OF THE WORLD'S POPULATION
CALLED THE "YUXI CIRCLE"**



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The Yuxi Circle is a geographic concept centered around Yuxi, a city in Yunnan Province, China, that illustrates an astonishing fact about global population distribution! When you draw a circle with a radius of approximately 4,000 kilometers (2,500 miles) around Yuxi, it encloses parts of more than 20 countries in Asia, including China, India, Indonesia, Bangladesh, Japan, and others.

What makes the Yuxi Circle remarkable is that over 50% of the world's population lives within this small area, even though it covers less than 10% of Earth's land surface. This is because it includes some of the most densely populated countries in the world, such as China and India, each with populations over a billion, along with other populous nations in Southeast and



65.2K



1K



April 27, 2025

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About Us

Building the Data Backbone for the Global South

In 10 years, we want any data that is collected, processed, and distributed in the Global South to be done with Amini as the backbone. Our R&D will be the key to a true technological leapfrog for our economies and communities.

2.5TB

Training Data

+25

Countries Active

1000+

Data Sources

80B

Hectares Analyzed Land



AMINI

PLATFORM

RESOURCES

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Founded in 2022, headquartered in Nairobi, and built by a diverse team from across the Global South, Amini is building foundational technologies for the fastest growing economies.



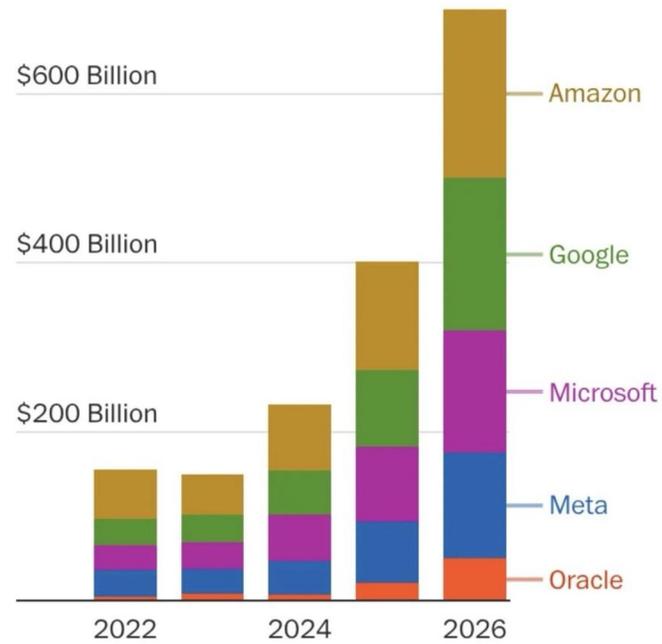
Carnegie Mellon University



India's Prime Minister Narendra Modi (L) takes a group photo with AI company leaders including OpenAI CEO Sam Altman (C) and Anthropic CEO Dario Amodei (R) at the AI Impact Summit in New Delhi on February 19, 2026.

Ludovic Marin | Afp | Getty Images

Companies are spending more on long-term projects as they race to develop artificial intelligence.



Source: S&P Capital IQ, company forecasts and Visible Alpha estimates

SHIRA OVIDE / THE WASHINGTON POST

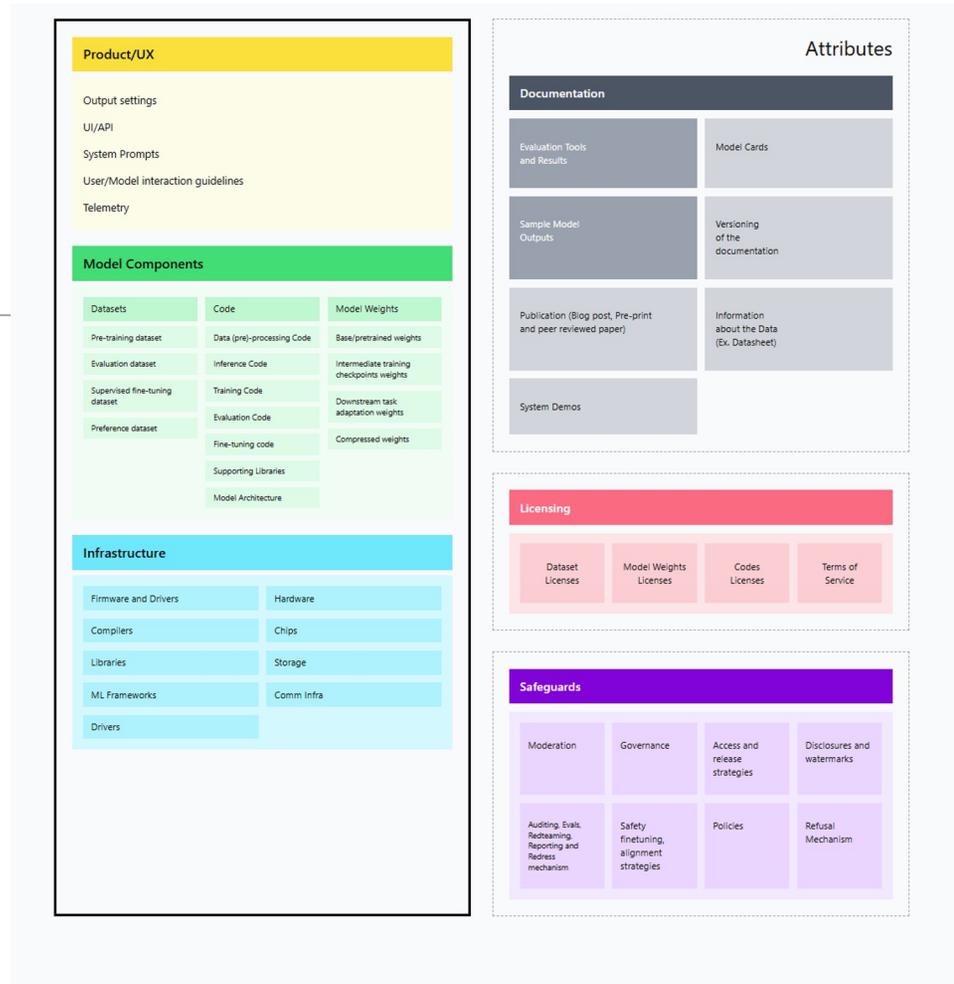


Figure 1 in <https://arxiv.org/pdf/2405.15802>



● Academic Partners

● Non-Profit Partners

● Funding Partners

● Programme Partners

● OFAI Fellows

● Programme Support

Programme Partners

Partners who have supported defined OFAI programmes or curriculum initiatives through scoped, time-limited collaboration.



**NobleReach
Foundation**

Programme
Partner -
Curriculum
Development
(2024)

● Academic Partners

● Non-Profit Partners

● Funding Partners

● Programme Partners

● OFAI Fellows

● Strategic Support

Funding Partners

Partners who provide core funding to support OFAI's organisation and mission.



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University
Libraries

Carnegie
Mellon
University
(CMU) Library
Funding Partner



Omidyar
Network
Funding Partner