Unlocking AI's Full Potential:

Open Source and Open Standards Will Shape the Future of Intelligent Systems

Matt White - Executive Director, PyTorch Foundation

GM of AI, Linux Foundation

Jan 27, 2025

Nvidia drops nearly 17% as China's cheaper AI model DeepSeek sparks global tech sell-off

CNBC

Jan 27, 2025

DeepSeek's R1 Launch Shows There Are No Moats Among Large Language Models

MORNINGSTAR®

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February 1, 2025

OpenAI is 'on the wrong side of history' and **needs a new open-source strategy** after DeepSeek shock

FORTUNE

Photograph: JOEL SAGET/Getty Images

July 23, 2024

Open Source AI is the Path Forward

Mark Zuckerberg, Founder and CEO, Meta

Photograph: Anna Moneymaker/Getty Images

March 19, 2025

It has become clear that open source will be the winner [in AI].
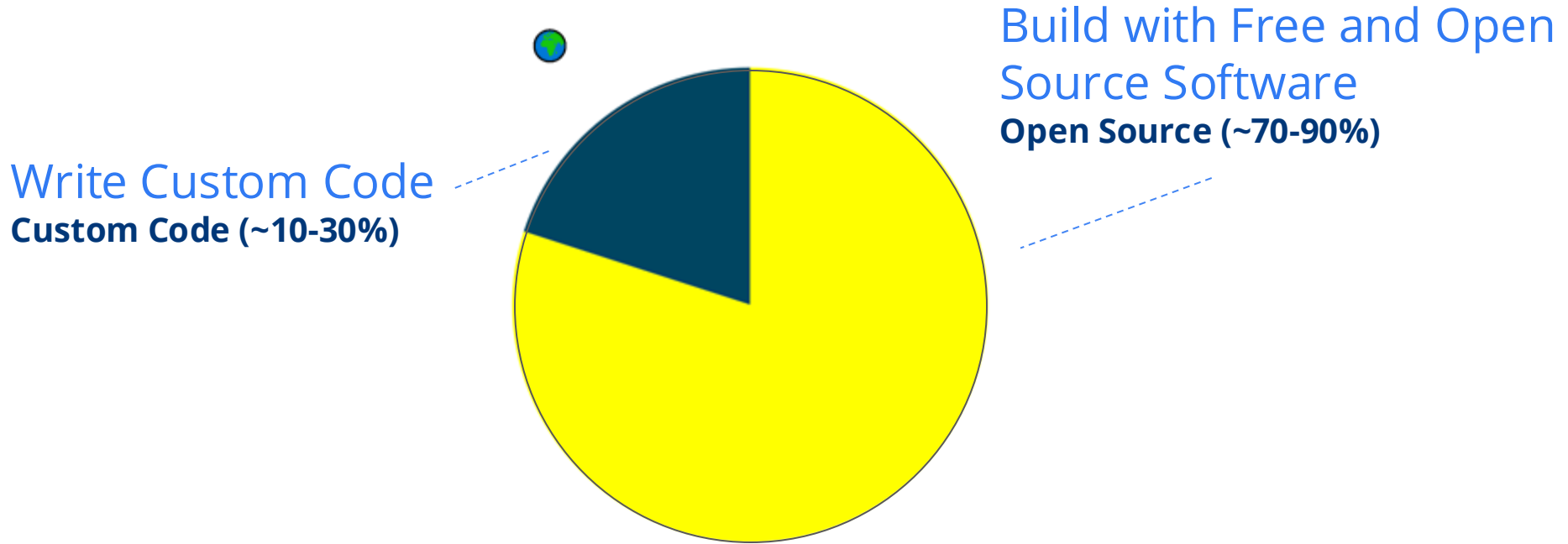
Kai-Fu Lee, Bloomberg

Open Source
Software
=
$9 Trillion
in Value

Harvard
Business
School

Open Source is Eating the World

Write Custom Code
Custom Code (~10-30%)

Build with Free and Open Source Software
Open Source (~70-90%)

Source: Laboratory for Innovation Science at Harvard (LISH)

– Open Source AI is Having a Moment!

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Why This Matters For AI and Now?

🌐 The Global AI Race Is Accelerating

- Nations and companies are competing to establish **dominance in AI**.
- **Proprietary systems are creating silos** and increasing geopolitical friction.
- Open models offer an **accessible alternative**.

🔒 Demand for Transparency and Trust

- Regulators, enterprises, and end-users are demanding **explainable, auditable, and safe AI systems.**
- **Openness is the most scalable path to trust**—especially for high-stakes domains like healthcare, finance, and government.

📈 Innovation Is Happening in the Open

- Breakthroughs in LLMs, agentic workflows, reasoning and alignment techniques are increasingly coming from **open communities.**
- **Open-source** ecosystems like PyTorch, Hugging Face, and many others have **democratized AI.**

⚖️ Policy and Compliance Require Action

- The EU AI Act, U.S. Executive Orders, and GPAI commitments are creating a l**egal shift toward openness**.
- Organizations need **frameworks, licenses, and standards** to ensure compliance and interoperability.

Case Study: PyTorch

PyTorch

✅ Key Outcomes:

- Adopted by 80%+ of AI researchers

- Utilized by most contemporary LLMs and mission-critical production systems

- Trusted by governments and nonprofits

🌏 Ecosystem Growth:

- 24k+ forks and 89K+ GitHub stars

- 3800+ contributors globally across all continents

- Contributions by over 250 different companies worldwide

📦 Lessons for Open Source AI:

- Modular and extensible design

- Strong vendor neutral governance under the PyTorch Foundation

- Integration with open standards like ONNX and OpenVINO

At the Linux Foundation

Foundational Technologies

Building Community

- Model Openness Framework
- Responsible Generative AI Framework
- Model Openness Tool
- World Dataset
- Open Model Initiative

Building an Open Source AI Ecosystem

AI & DATA (LF)

PyTorch

Applications
- AI application frameworks
- Agentic frameworks
- Prompt routing
- Prompt caching systems
- Prompt engineering
- Monitoring and Observability

Data
- EDA
- Data preprocessing
- Data storage (RAG, Vector RAG)
- Data governance
- Synthetic data generation
- Data security and privacy

Models
- Pre-training & Continual Pre-training
- Fine-tuning & Alignment / RLHF / DPO
- Optimization (quantization, pruning, distillation)
- Guardrails
- Benchmarking
- Explainability & Interpretability
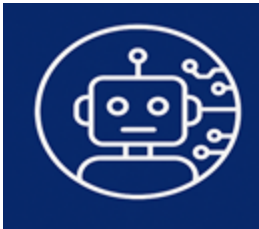- Domain adaptation

Infrastructure
- Model Serving
- Custom Kernels
- Multi-GPU management
- Edge inference
- Monitoring and Observability
- Model lifecycle management (workflow, versioning)

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Open Standards for AI

A Need for Open Standards in AI

Model Context Protocol

A2A protocol

Agent Communication Protocol

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Linux Foundation Standards

- 200+ open standards

Open License for AI

OpenMDW - Permissive Open Model License

✅ **First permissive license built for ML models**

📦 Covers **model architecture, parameters, data, tools, and docs**

🔐 Grants rights under **copyright, patent, database, and trade secret** laws

📃 Includes **patent litigation protection** and **attribution**

🎯 **No restrictions on model outputs**

EU **Aligned with EU AI Act exemptions** for open-source AI

⚙️ **Simple implementation**: just add a `LICENSE` file to the root of your repo

Call to Action

Call to Action

🚀 **Call to Action: Make Open Source AI the Standard!**

- Use **open source licenses** for AI tools and libraries

- Adopt **permissive licenses** for ML models (e.g., **OpenMDW**)

- Champion **global collaboration**—resist AI nationalism

- Encourage **innovation-friendly AI policy**, not overregulation

- Support **vendor-neutral open standards** for AI interoperability

- Build and deploy **responsible, trustworthy AI systems**

**Let's move from open source AI having a moment—
to open source AI becoming the norm!**

Open Software.
Open Models.
Open Standards.
Open Future.

Merci!
Thank you!

Additional Slides