AI governance: Global Trends and African Perspectives

African AI and Blockchain Policy Forum

15 November 2023

Luis Aranda

Economist

Outline

Presentation on "AI governance: Global Trends and African Perspectives"

1. Latest AI trends, risks and issues

2. Regulatory approaches to AI

3. AI in Africa and Mauritius

4. The case of India

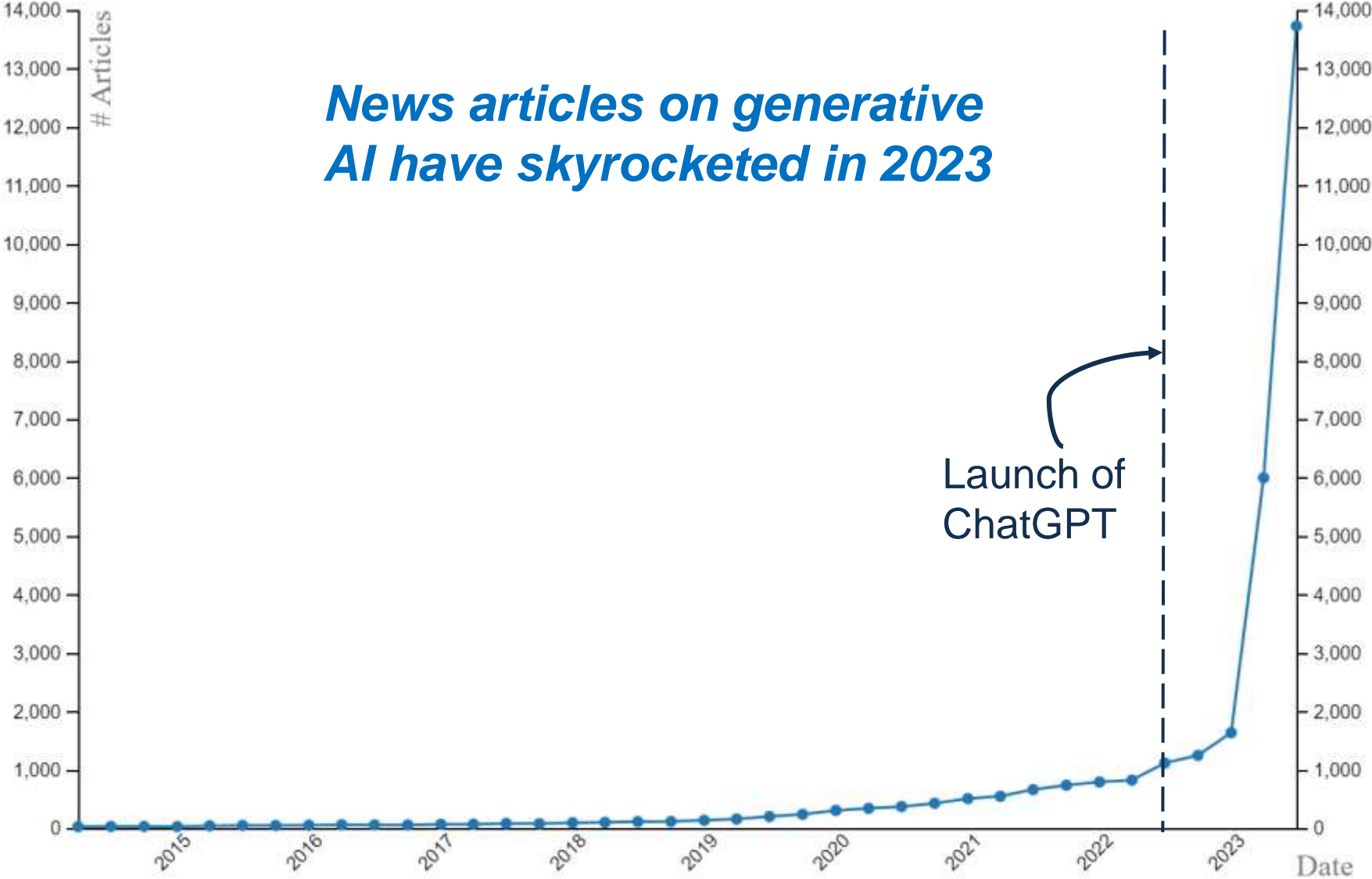## Panel discussion on "Lessons from AI policy in Africa and beyond"

1. Latest AI trends, risks and issues

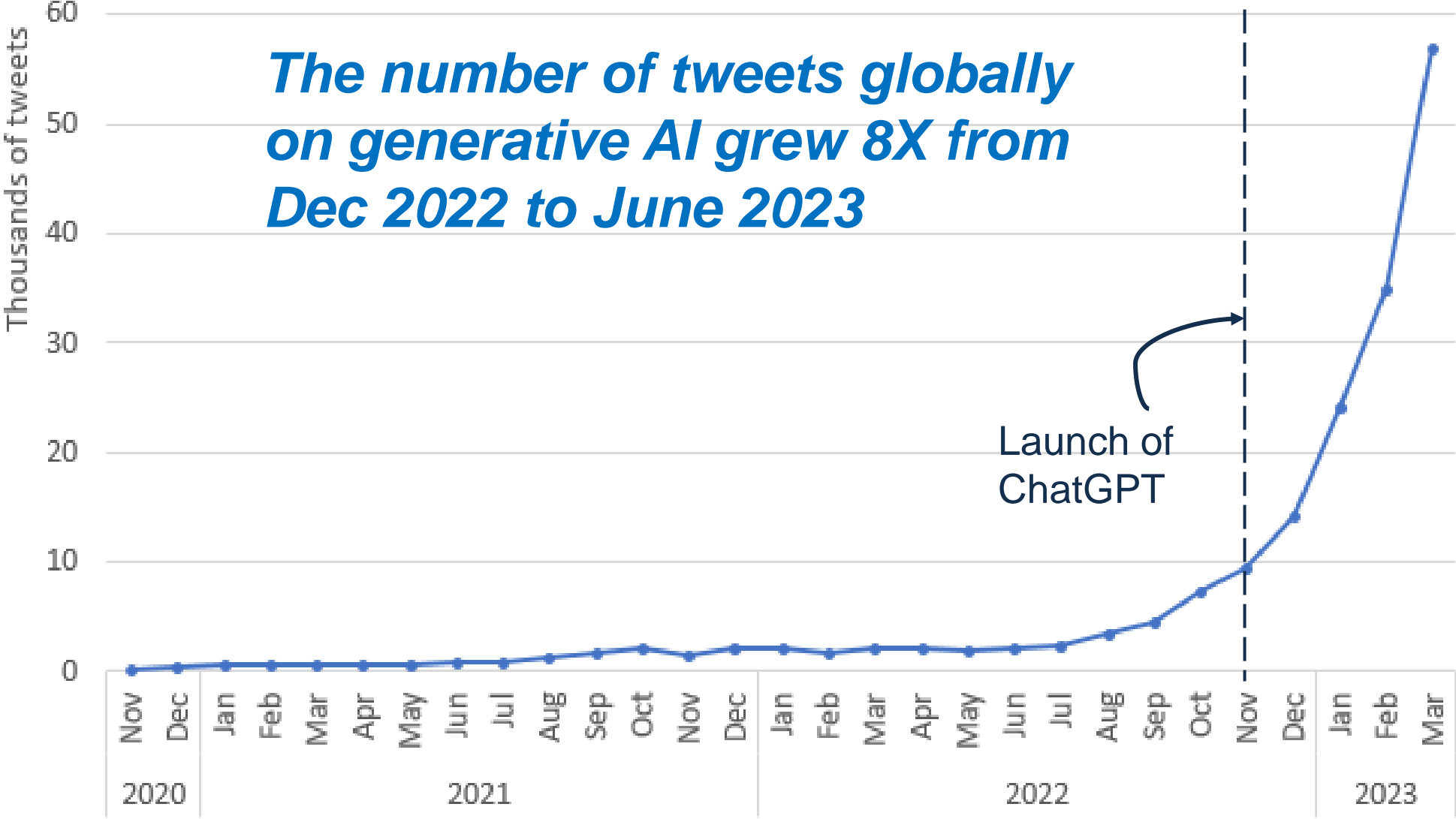**Awareness and opportunities related to AI have increased with generative AI…**

Generative AI has rapidly entered public discourse

News articles on generative AI have skyrocketed in 2023

Launch of ChatGPT

Generative AI has rapidly entered public discourse

The number of tweets globally on generative AI grew 8X from Dec 2022 to June 2023

Launch of ChatGPT

Thousands of tweets

60
50
40
30
20
10
0

Nov Dec | Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec | Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec | Jan Feb Mar

2020 | 2021 | 2022 | 2023

The same dramatic trends can be observed in VC investments in generative AI start-ups worldwide

USD 10 billion MS investment in OpenAI

USD 1 billion MS investment in OpenAI
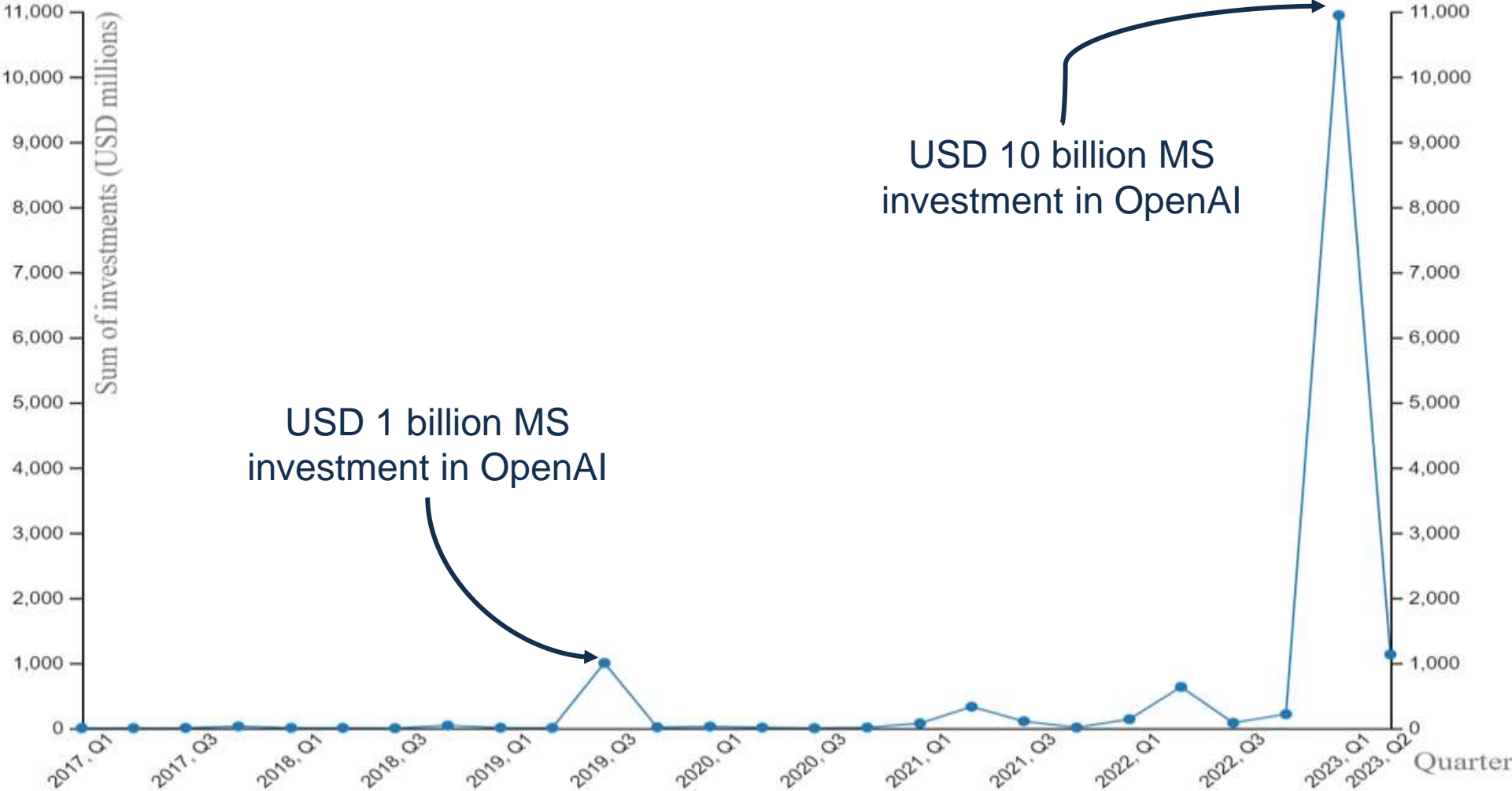
The rapid growth of generative AI research precedes investments

Publications on generative AI see a rapid growth since 2017.

These publications have grown 5X since 2019

"Attention is all you need" paper (transformer model)

Launch of ChatGPT
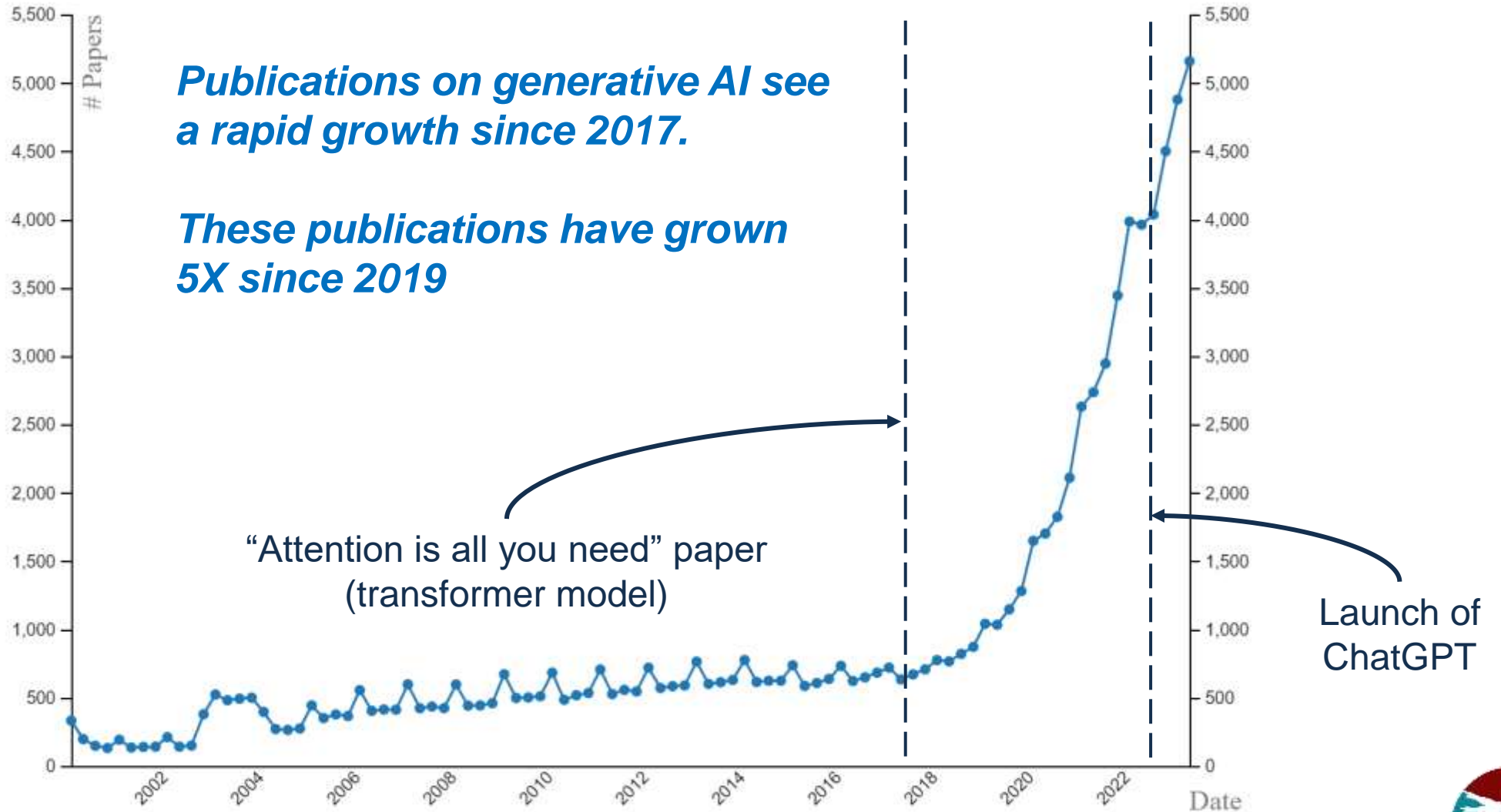
The rapid growth of open-source code for generative AI also starts in 2017

"Attention is all you need" paper (transformer model)

Launch of ChatGPT
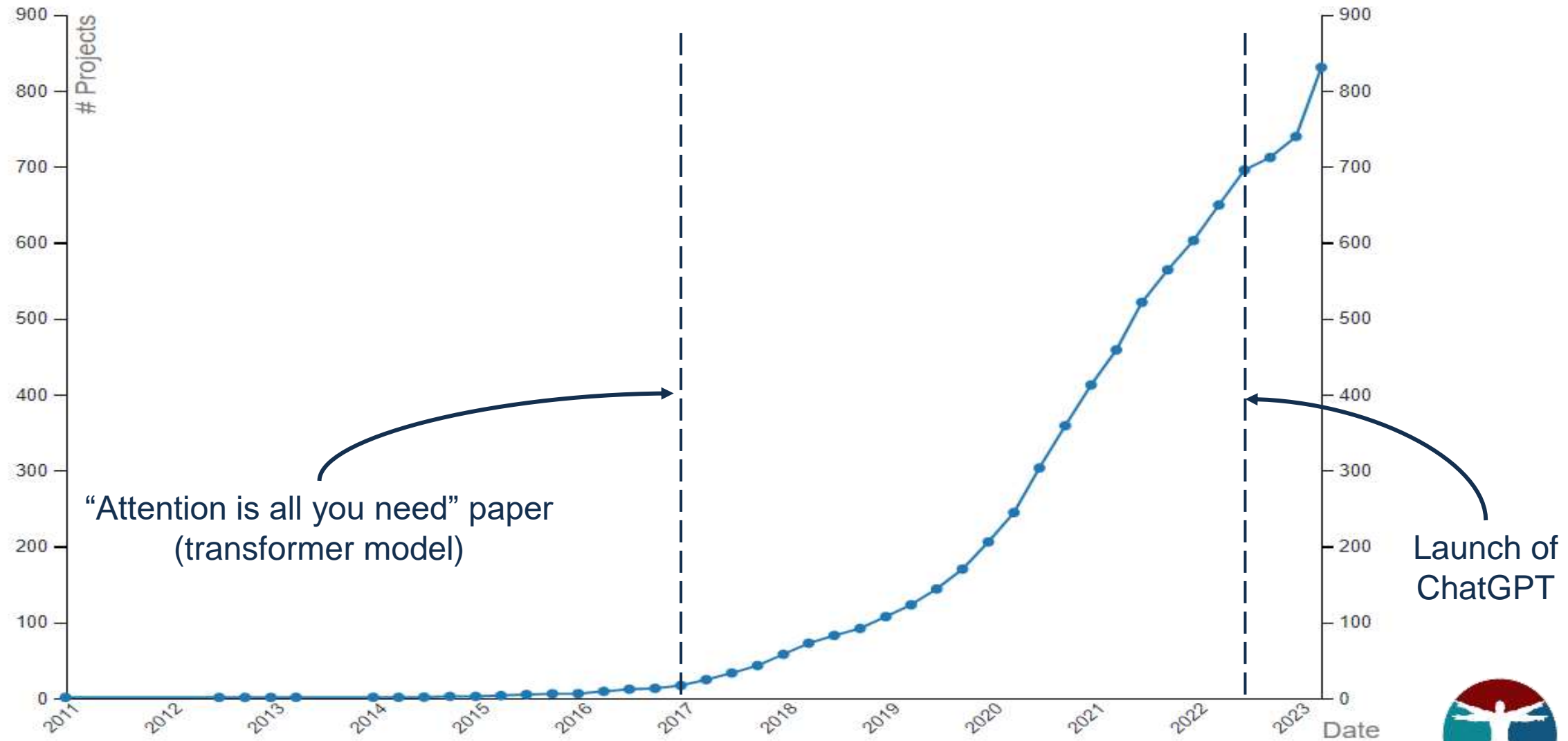
Demand for 'machine learning' skills in online job postings has increased by 130% since 2018
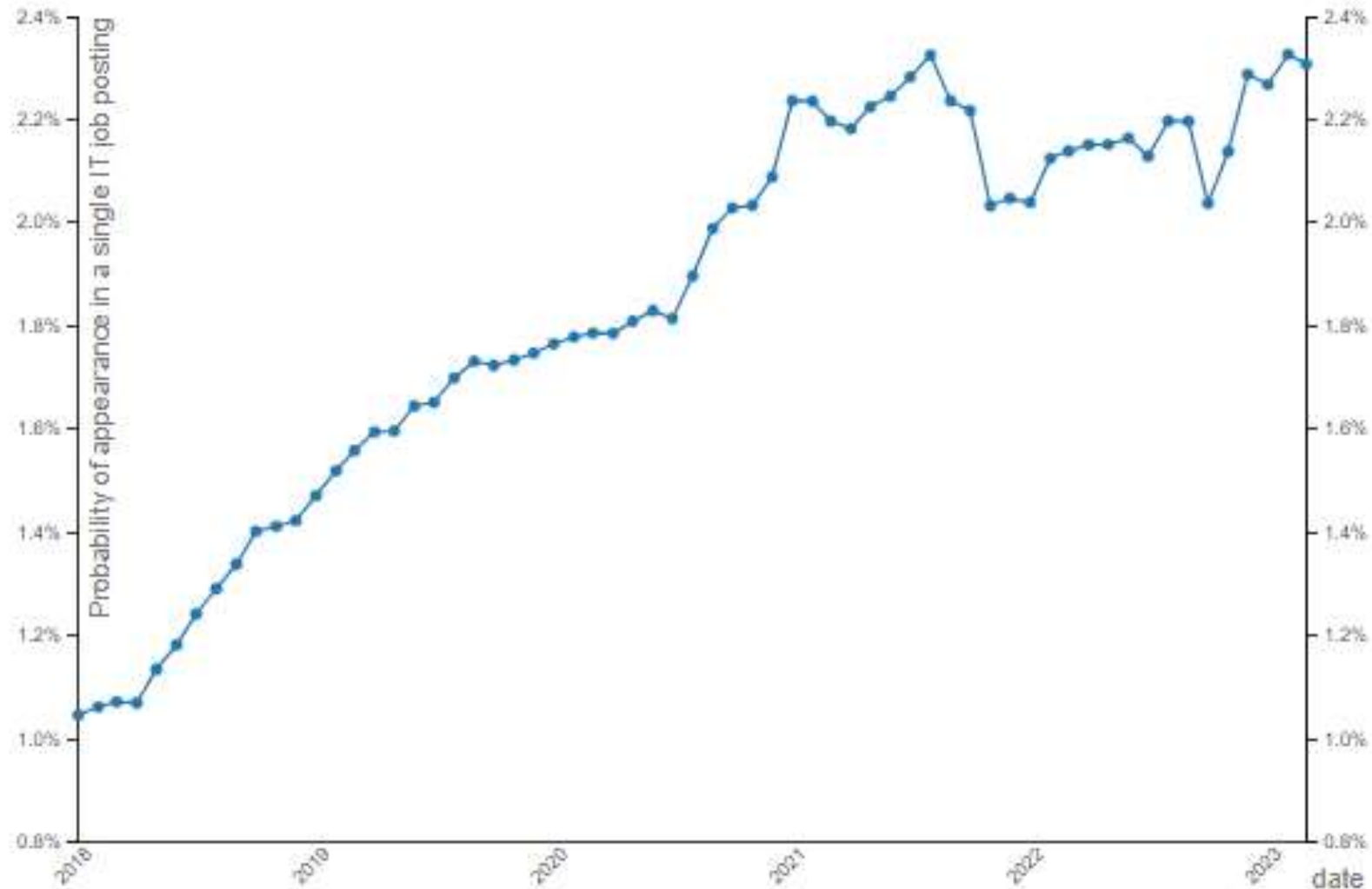
But risks, incidents and issues have also increased…

An increasing number of news articles report AI harms to people, organisations and the environment.

Number of incidents

600
500
400
300
200
100
0

Date: 2014-01, 2014-05, 2014-09, 2015-01, 2015-05, 2015-09, 2016-01, 2016-05, 2016-09, 2017-01, 2017-05, 2017-09, 2018-01, 2018-05, 2018-09, 2019-01, 2019-05, 2019-09, 2020-01, 2020-05, 2020-09, 2021-01, 2021-05, 2021-09, 2022-01, 2022-05, 2022-09, 2023-01, 2023-05, 2023-09

■ Total number of incidents (monthly)   ■ Normalised number of incidents (3-month moving average)

*An incident is a collection of one or more news articles covering the same event.

oecd.ai/incidents

AI incidents and hazards from news articles identified by the OECD.AI Incidents Monitor (AIM) climb rapidly in 2023

OECD.AI
Policy Observatory

Blog ⌄   Experts ⌄   AI Principles ⌄   Policy areas ⌄   Trends & data ⌄   Tools & metrics   Countries   About ⌄   🔍

Home › AI Incidents Monitor

With the support of

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FOUNDATION

⊕ OECD AI Incidents Monitor (AIM)

The OECD AI Incidents Monitor (AIM) offers an accessible starting point for comprehending the landscape of AI-related challenges. This initiative assumes significance in the context of AI's rapid proliferation across various domains. Whether you're a policymaker, a practitioner, or a concerned observer, the AIM equips you with insights into the incidents and hazards that shape the AI arena. As the AIM evolves, it aspires to foster a better understanding of AI incidents' multifaceted nature, empowering stakeholders to make informed decisions for the responsible development and deployment of AI technologies.

› Please see methodology and disclosures here.

oecd.ai/incidents

🔍 Enter a concept or a keyword

[Search incidents]   [Reset]

ADVANCED SEARCH OPTIONS ∧

Date Range:	Country	Industry	AI Principle
All time ⌄	Select Country	Select Industry	Select AI Principle

Severity	Harm Type	Affected Stakeholders	Type of Search
Select Severity ⌄	Select Harm Type	Select Affected Stakeholders	All of the concepts/keywords (AND) ⌄

OECD AI Incidents Monitor (AIM)
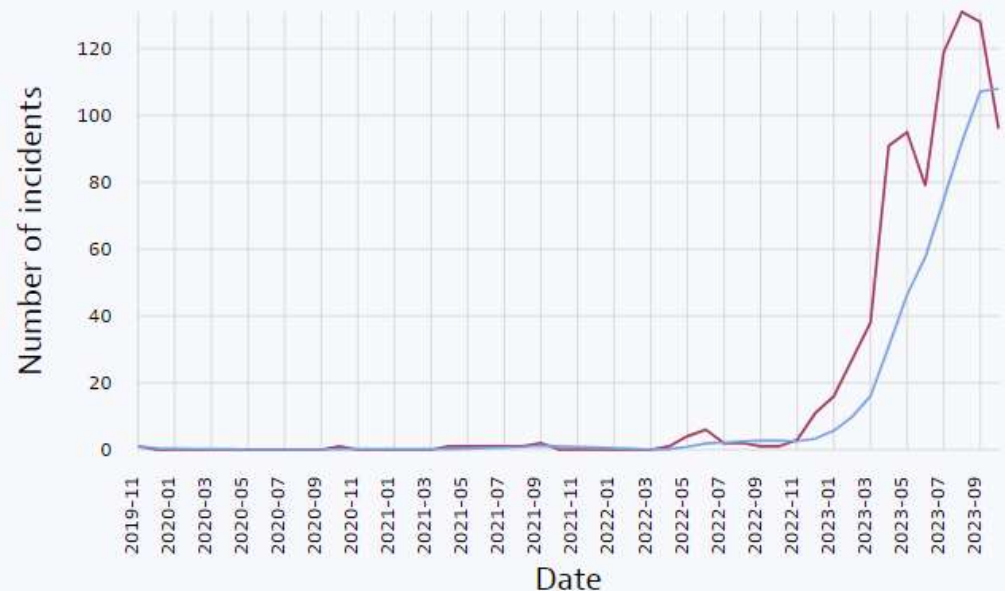
Patrick J McGovern
FOUNDATION

Generative artificial intelligence ✕   Search incidents   Reset

Summary visualisations

Evolution of incidents ⌄

Legend:
- Total number of incidents (monthly)
- Normalised number of incidents (3-month moving average)

*An incident is a collection of one or more news articles covering the same event.

Summary statistics

	Incidents	Articles
All time total	860	4064
Current month's total	0	0
Last month's total	96	484
Peak date	2023-08	2023-07
Peak amount	131	621
% change (month-over-month)	-25	-11.84
% change (quarter-over-quarter)	21.16	12.83
% change (year over year)	4805.88	3856.12

*Note: Percent change is calculated based on preceding full months (i.e. the current month is excluded).

Results: About 860 incidents

Number of results: 20 ⌄   Sort by: Number of articles ⌄   Download results

OECD AI Incidents Monitor (AIM)

Generative artificial intelligence ✕   Privacy ✕   Search incidents   Reset

Don't tell anything to a chatbot you want to keep private | CNN Business

📅 2023-04-07   ☰ 20 articles   🏢 JPMorgan Chase, OpenAI

The widespread adoption of AI chatbots has raised concerns about data privacy among companies, regulators, and industry observers. Some companies, like JPMorgan Chase, have restricted employees from using ChatGPT due to compliance concerns related to third-party software. OpenAI, the company behind ChatGPT, had to temporarily take the tool offline to fix a bug that allowed users to see other users' chat history. The bug also exposed personal information such as names, email addresses, and credit card details. Experts advise against sharing any sensitive information with chatbots due to the potential risks of data usage and privacy breaches.

AI principles:	Privacy & data governance Transparency & explainability
Industries:	Digital security
Affected stakeholders:	Business Public
Harm types:	Human rights Economic/Property

▶ Why is this an incident?

FTC issues warning on misuse of biometric info amid rise of generative AI

📅 2023-05-18   ☰ 5 articles   🏢 Federal Trade Commission (FTC)

The Federal Trade Commission (FTC) has warned about the potential misuse of consumers' biometric information in connection with emerging technologies like generative artificial intelligence (AI) and machine learning. The FTC's policy statement highlights the risks to consumers' privacy and data due to the increasing use of biometric data, which includes physical, biological, and behavioral traits. The article also includes a quote from Senator Blumenthal, who expressed concern about the possibility of AI providing endorsements that could have serious consequences.

AI principles:	Privacy & data governance Respect of human rights
Industries:	Digital security Government, security and defence
Affected stakeholders:	Public
Harm types:	Economic/Property Human rights

▶ Why is this an incident?

An extra in Marvel's 'WandaVision' reportedly said she was herded to a trailer for a body scan and never told how her likeness would be used

📅 2023-08-01   ☰ 10 articles

The article discusses concerns among Hollywood actors regarding the use of AI and body scans in the industry. Background actors are worried that their likenesses could be digitally recreated without their consent or compensation. The SAG-AFTRA union has been negotiating with studios, proposing that background actors be paid a day's rate in exchange for companies taking scans that could be used to create their digital likenesses indefinitely. The union claims that the proposal allows companies to use the scans without consent or compensation, while the Alliance of Motion Picture and Television Producers disputes this and states that permission and bargaining would be involved.

AI principles:	Robustness & digital security Transparency & explainability Privacy & data governance
	Respect of human rights
Industries:	Arts, entertainment and recreation
Affected stakeholders:	Workers Business
Harm types:	Economic/Property Psychological Public interest Reputational Human rights
Severity:	Non-physical harm

▶ Why is this an incident?

More and more businesses are blocking ChatGPT on work devices
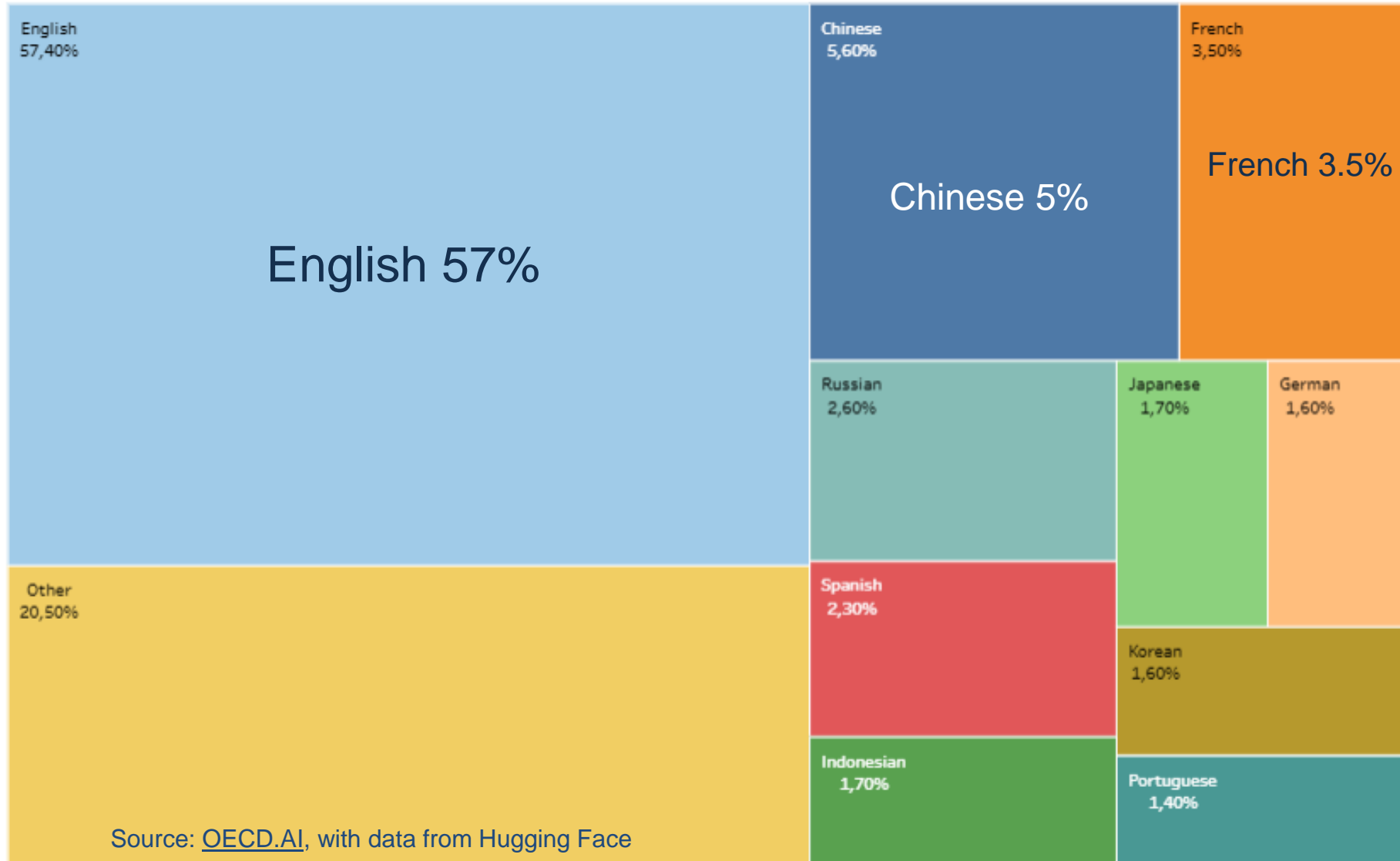
📅 2023-08-03   ☰ 6 articles   🏢 BlackBerry

A report by BlackBerry reveals that a growing number of organizations are banning the use of generative AI tools like ChatGPT due to concerns over privacy, security, and reputational damage. The survey found that 66% of organizations will be prohibiting the use of such AI writers at the workplace, with 76% of IT decision-makers agreeing that employers have the right to control software usage. While 54% of organizations acknowledge the potential productivity boost of powerful AI tools like ChatGPT, there is a conflict due to the risks they pose to company security and privacy. Microsoft is working on a more secure version of the GPT model to address concerns about data leakage.

AI principles:	Privacy & data governance Robustness & digital security
Industries:	Digital security IT infrastructure and hosting
Affected stakeholders:	Business Workers
Harm types:	Public interest Human rights Economic/Property
Severity:	Non-physical harm

▶ Why is this an incident?

Almost 60% of available datasets in Hugging Face are in English (out of >11K datasets)

Open-source datasets by language

English 57,40%
English 57%

Chinese 5,60%
Chinese 5%

French 3,50%
French 3.5%

Other 20,50%

Russian 2,60%

Japanese 1,70%

German 1,60%

Spanish 2,30%

Korean 1,60%

Indonesian 1,70%

Portuguese 1,40%

Despite an increase in overall number of AI publications with at least one female author, the gender gap continues to grow

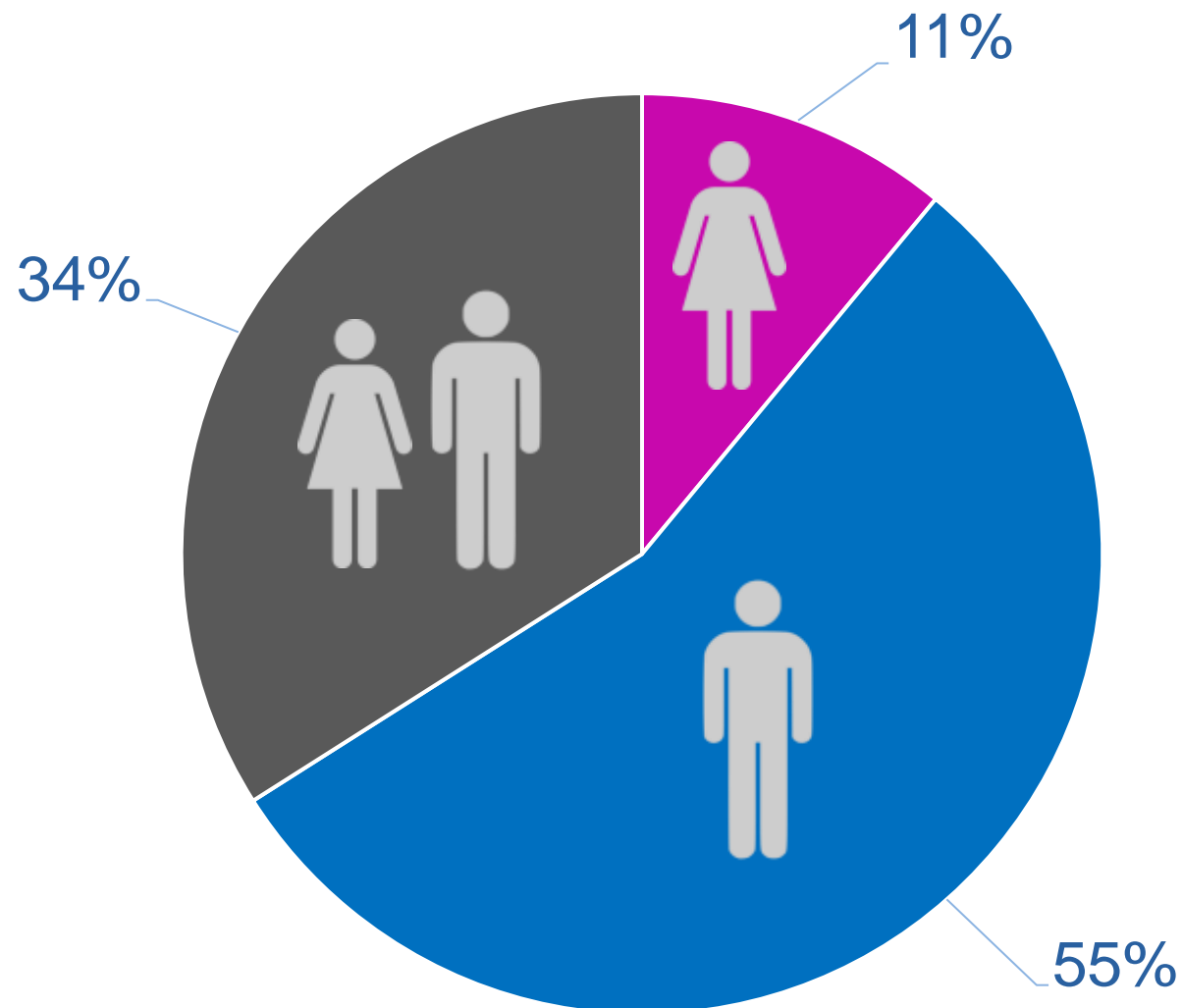Evolution of AI publications by gender

AI publications with at least 1 **male** author

AI publications with at least 1 **female** author
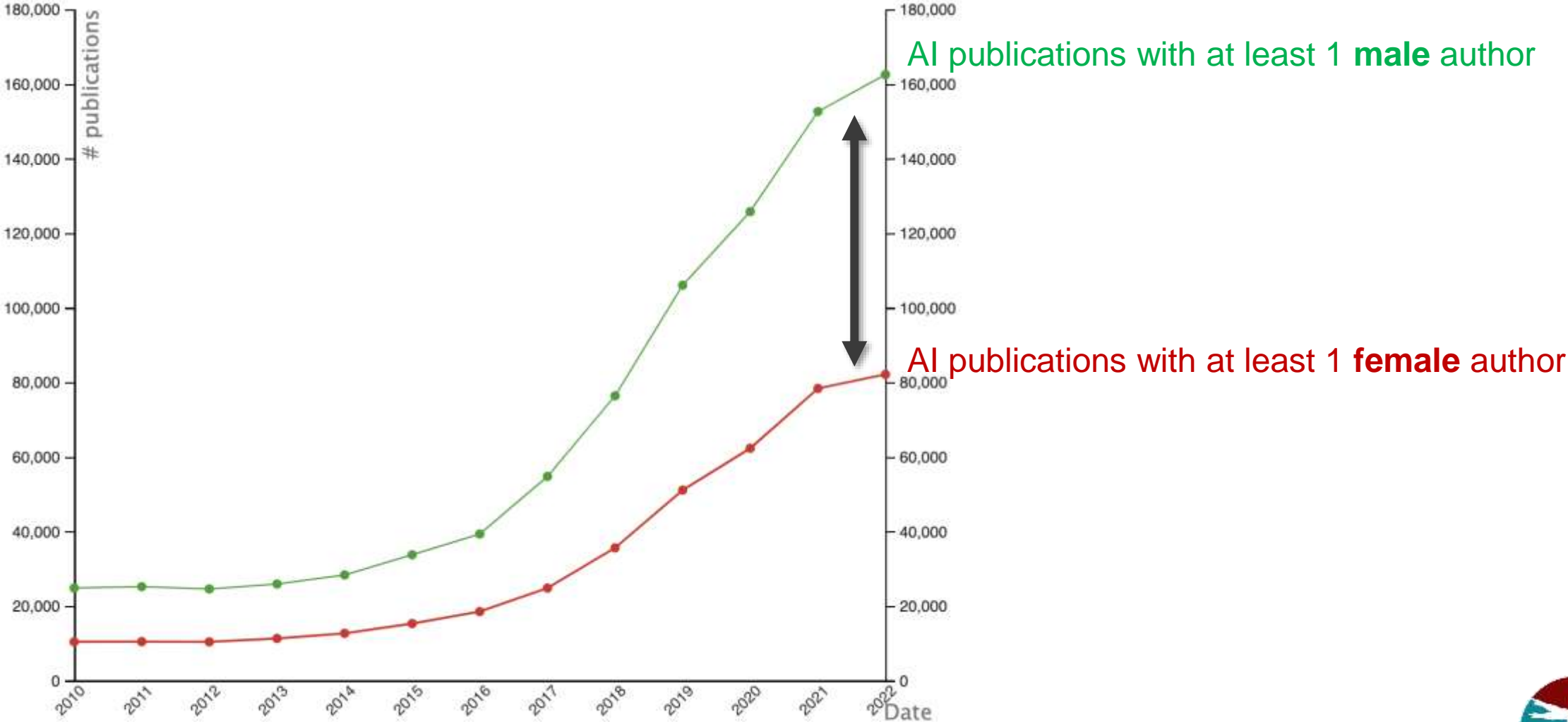
Source: OECD.AI, with data from Elsevier (Scopus)

In 2022, 11% of AI publications worldwide were written exclusively by women (vs. 55% by men)

11%
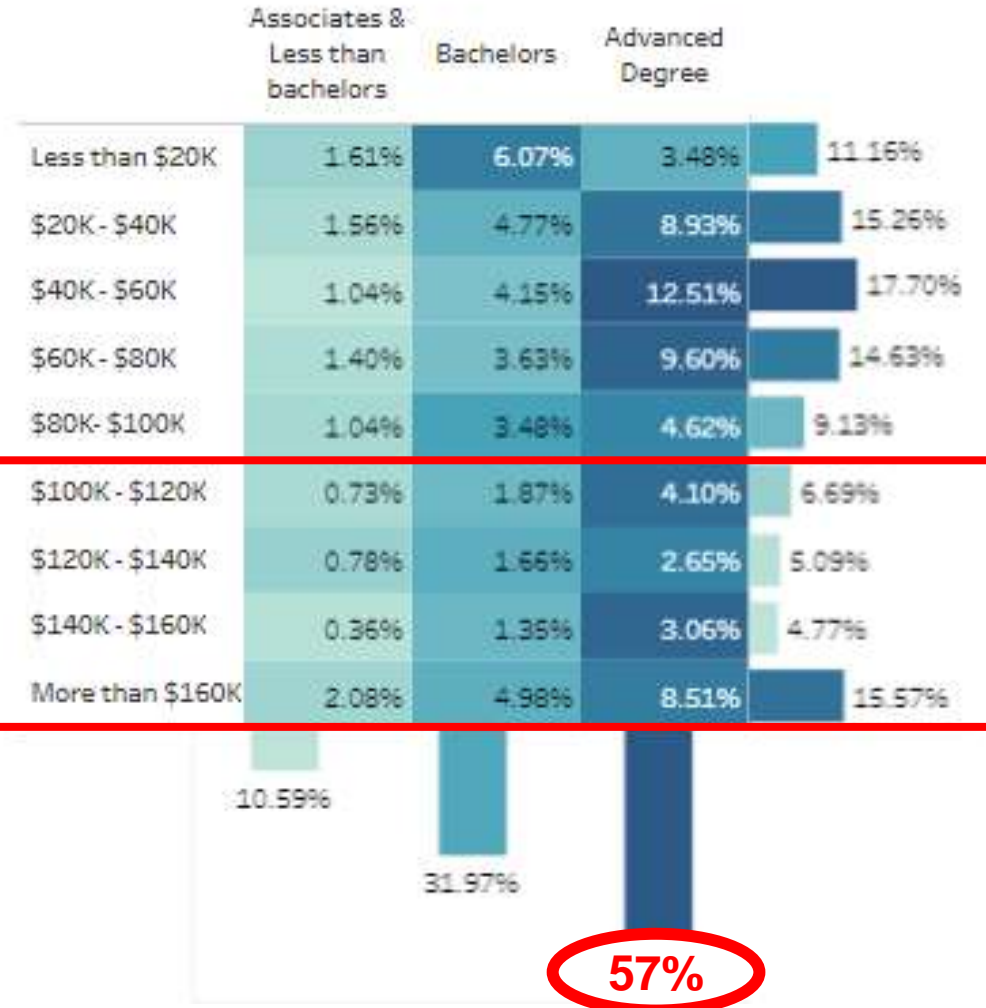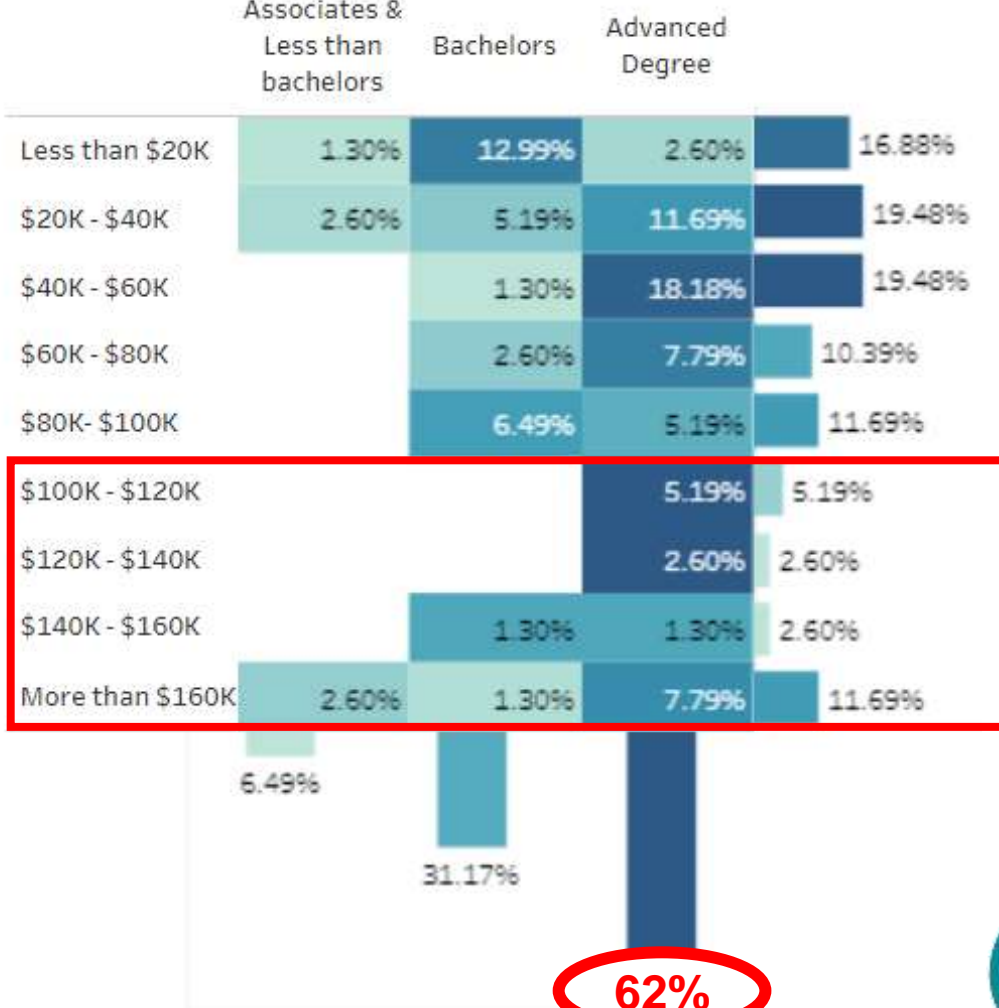
34%

55%

In 2022, women in AI were better educated than men (62% of them had an advanced degree vs 57% men). But men had higher wages (32% of men declared earning >USD$100/yr vs 22% of women)

Men (94% of answers)

	Associates & Less than bachelors	Bachelors	Advanced Degree	
Less than $20K	1.61%	6.07%	3.48%	11.16%
$20K - $40K	1.56%	4.77%	8.93%	15.26%
$40K - $60K	1.04%	4.15%	12.51%	17.70%
$60K - $80K	1.40%	3.63%	9.60%	14.63%
$80K - $100K	1.04%	3.48%	4.62%	9.13%
$100K - $120K	0.73%	1.87%	4.10%	6.69%
$120K - $140K	0.78%	1.66%	2.65%	5.09%
$140K - $160K	0.36%	1.35%	3.06%	4.77%
More than $160K	2.08%	4.98%	8.51%	15.57%
	10.59%	31.97%		

32%

57%

Women (5% of answers)

	Associates & Less than bachelors	Bachelors	Advanced Degree	
Less than $20K	1.30%	12.99%	2.60%	16.88%
$20K - $40K	2.60%	5.19%	11.69%	19.48%
$40K - $60K		1.30%	18.18%	19.48%
$60K - $80K		2.60%	7.79%	10.39%
$80K - $100K		6.49%	5.19%	11.69%
$100K - $120K			5.19%	5.19%
$120K - $140K			2.60%	2.60%
$140K - $160K		1.30%	1.30%	2.60%
More than $160K	2.60%	1.30%	7.79%	11.69%
	6.49%	31.17%		

22%

62%

Source: OECD.AI, with self-declared data from Stack Overflow survey

2. Regulatory approaches to AI

Regulatory approaches to AI include, broadly:

- **Soft law:** Ethical principles, codes of conduct, standards, etc.

- **Agile approaches:** Regulatory experimentation (e.g. sandboxes), responsible business conduct, etc.

- **Hard law:** Regulations and bans such as the EU AI Act, Canada's AI and Data Act, China's ban to AI-generated media without watermarks, etc.

Soft law: The OECD AI Principles
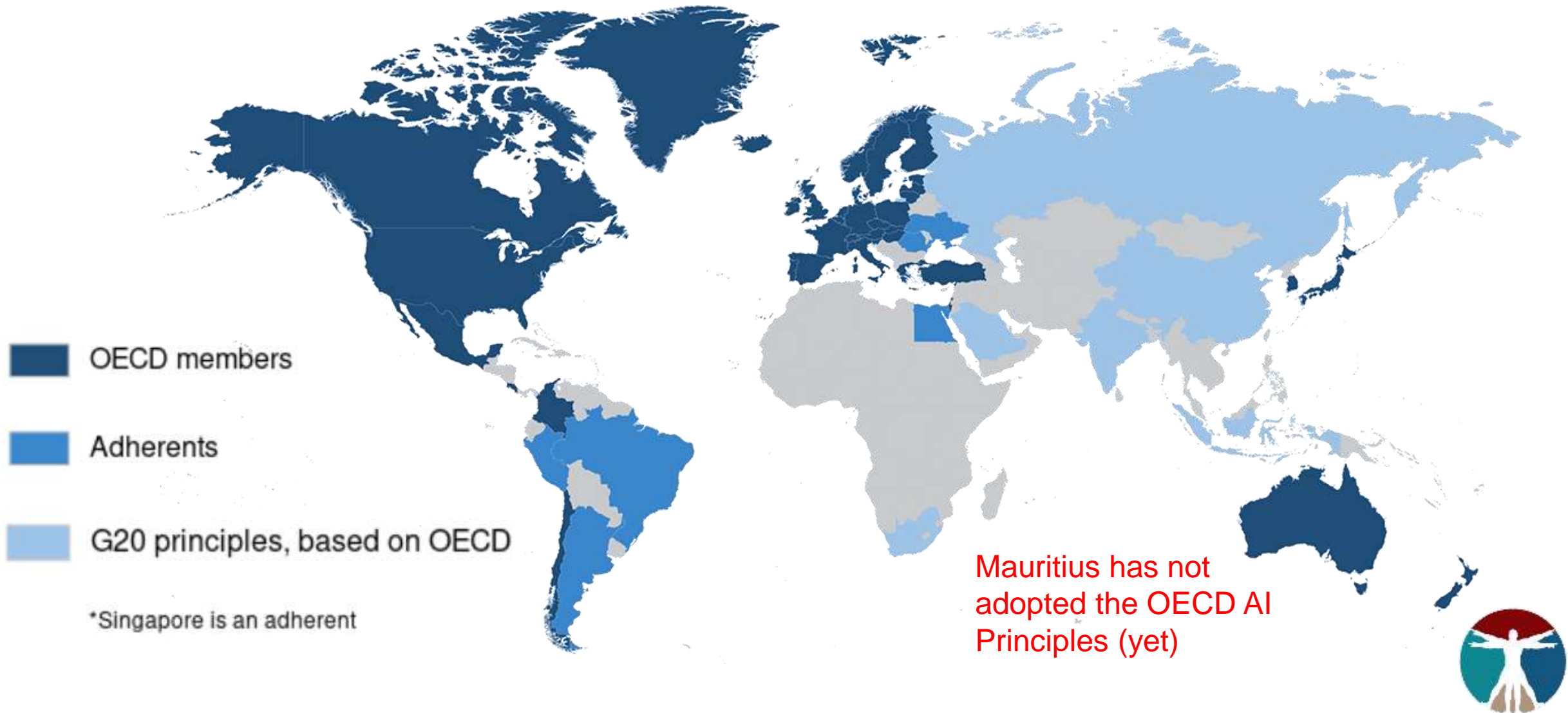
5 values-based principles for trustworthy, human-centric AI

- Benefit People & Planet
- Human rights, values & fairness
- Transparent & explainable
- Robust, secure & safe
- Accountable

5 principles for national policies, for AI ecosystems to benefit societies

- AI research & development
- Data, compute, technologies
- Policy & regulatory environment
- Jobs & skills, labour transitions
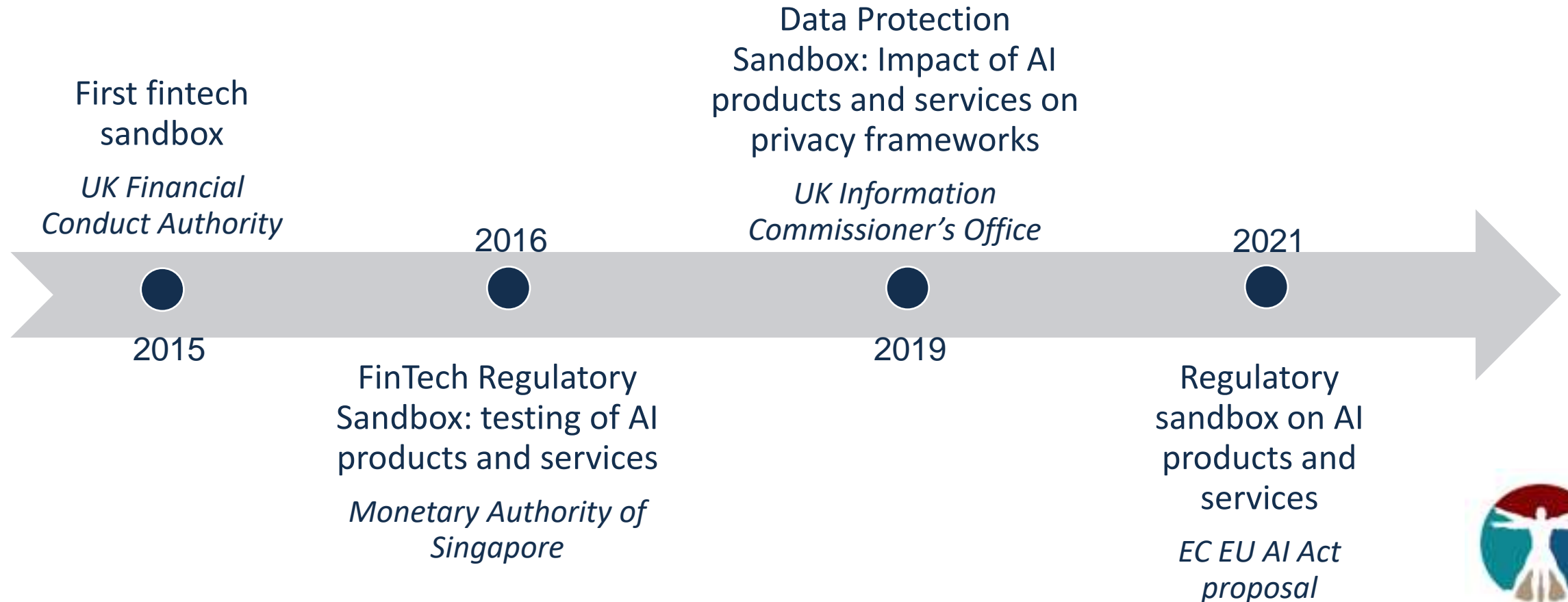- International cooperation & measurement

Countries that have committed to the OECD AI Principles

- **OECD members**
- **Adherents**
- **G20 principles, based on OECD**

*Singapore is an adherent

Mauritius has not adopted the OECD AI Principles (yet)

Laws and regulation: Comparative analysis of select emerging AI-specific regulations

Horizontal and sectoral approaches are not mutually exclusive, yet to-date, public authorities seem to prioritize elements of one approach over the other

Horizontal regulatory approach

- Priority of legal certainty and harmonization of interpretation and enforcement

- Creation of safeguards for protection against risks to health, safety, and human rights, among others

- Comprehensive regulation on AI systems to establish minimum standards of mandatory application across industries

- Standards to determine clearly how businesses should manage the technology

Vertical approach with sectoral regulations

- Individual initiatives by states or local governments to regulate limited, specific use of AI (recruitment, insurance, auditing, etc.)

- Context-specific, sectoral approach

- Domain-specific regulation and standards (data protection, automated driving, etc.)

AI is a global issue: The global governance debate

Existing initiatives

- G7 Hiroshima AI process
- UN High-Level Advisory Board
- OECD Working Party on AI Governance (AIGO)
- UK / US AI safety institutes

Emerging analogies

- *Joint research* e.g., European Organisation for Nuclear Research (CERN)
- *Oversight* e.g., International Atomic Energy Agency (IAEA)
- *Policy consensus* e.g., Intergovernmental Panel on Climate Change (IPCC)

3. AI in Africa and Mauritius

African AI policy landscape

- **Nine** countries in Africa have at least one policy initiative related to AI
  - *Egypt, Kenya, Mauritius, Morocco, Nigeria, Rwanda, South Africa, Tunisia and Uganda*
- Of those nine countries, **four** have national AI strategies
  - *Egypt, Mauritius, Morocco and Tunisia*
- And **two** have begun the process of consulting stakeholders to author a strategy
  - *Nigeria and Rwanda*
- Egypt is the only country in Africa to adhere to the OECD AI Principles
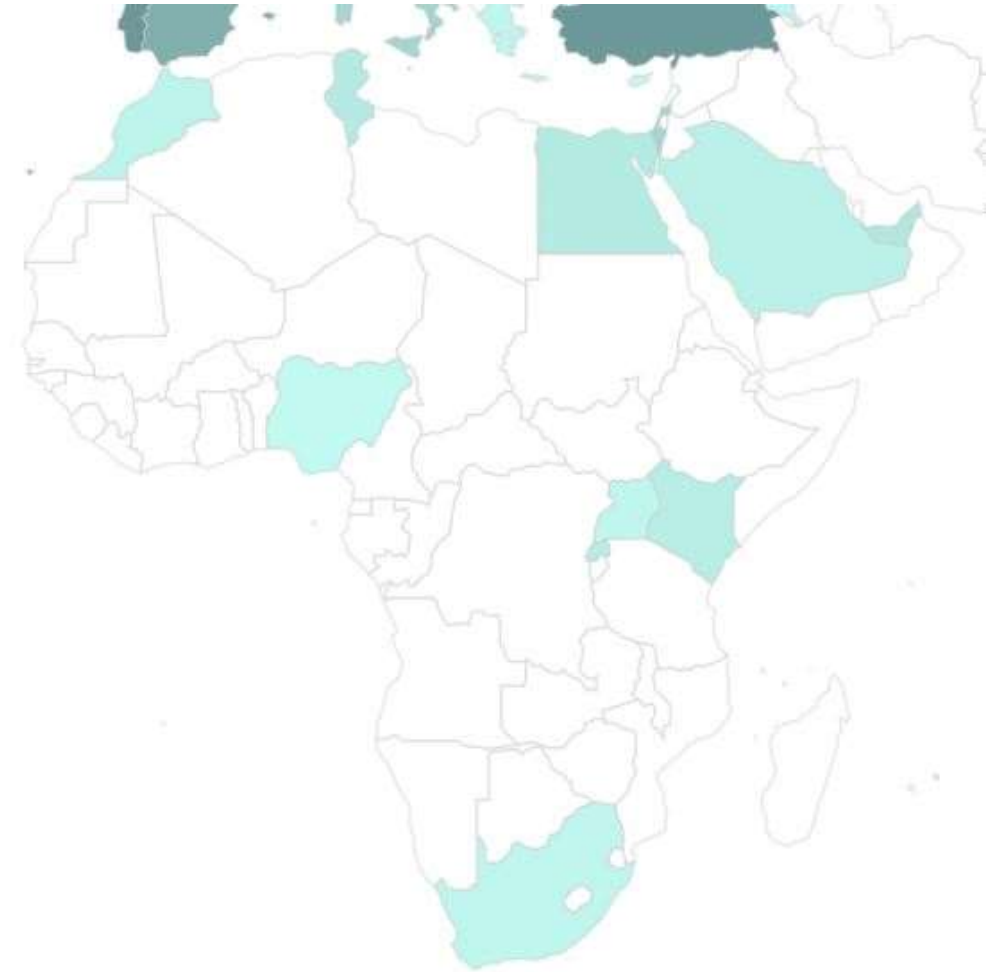
oecd.ai/dashboards

National AI policies & strategies

This section provides a live repository of over 800 AI policy initiatives from 69 countries, territories and the EU. Click on a country/territory, a policy instrument or a group targeted by the policy.

| Countries & territories | Policy instruments | Target Groups |

Search for a specific dash

Download all AI policies

Argentina	Croatia	India	Malta	Rwanda	Türkiye
Armenia	Cyprus	Indonesia	**Mauritius**	Saudi Arabia	Uganda
Australia	Czech Republic	Ireland	Mexico	Serbia	Ukraine
Austria	Denmark	Israel	Morocco	Singapore	United Arab Emirates
Belgium	Egypt	Italy	Netherlands	Slovakia	United Kingdom
Brazil	Estonia	Japan	New Zealand	Slovenia	United States
Bulgaria	Finland	Kazakhstan	Nigeria	South Africa	Uruguay
Canada	France	Kenya	Norway	Spain	Uzbekistan
Chile	Germany	Korea	Peru	Sweden	Viet Nam
China	Greece	Latvia	Poland	Switzerland	European Union
Colombia	Hungary	Lithuania	Portugal	Thailand	
Costa Rica	Iceland	Luxembourg	Romania	Tunisia	

Choose visualization   By initiative count

oecd.ai/dashboards

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Home > National strategies & policies > AI in Mauritius

AI in Mauritius

This section provides resources and information on the AI landscape in Mauritius, such as national AI policies, blog posts, trends and data visualisations, live news and publications.

AI policies in Mauritius

Download policies: ⟨/⟩ 📊   See all 2 policies

FILTER BY POLICY INSTRUMENT TYPE

Governance

MAURITIUS AI STRATEGY   ★ NATIONAL AI STRATEGY

MAURITIUS AI COUNCIL

The Government will be setting up a task force to develop a road map for Mauritius which will be responsible for project implementati...

AI research
AI research by institution

Indicator: # publications ▼   Country: -- All countries -- ▼
Organization type: ALL ▼   Add organization ▼

Log scale ☐   Cumulative ☐   Year: 2000 - 2023
2000 2005 2010 2015 2023

📊 ▲

French National Centre for Scientific Research
Chinese Academy of Sciences
Tsinghua University
Harbin Institute of Technology
Shanghai Jiao Tong University

AI software development
Contributions to public AI projects and project impact

AI projects impact indicator (# of forks): All AI projects ▼
Add country ▼   Log scale ☐

Year: 2011 - 2022   Percentage ☑
2011 2014 2016 2018 2020 2022

📊 ▲

X ■ Mauritius

Investments in AI
VC investments in AI

Indicator: Sum of investments (USD millions) ▼   Add country ▼
By quarter ☐   Log scale ☐   Cumulative ☑   Estimate 2023 value ☑   ▲

X ■ Mauritius

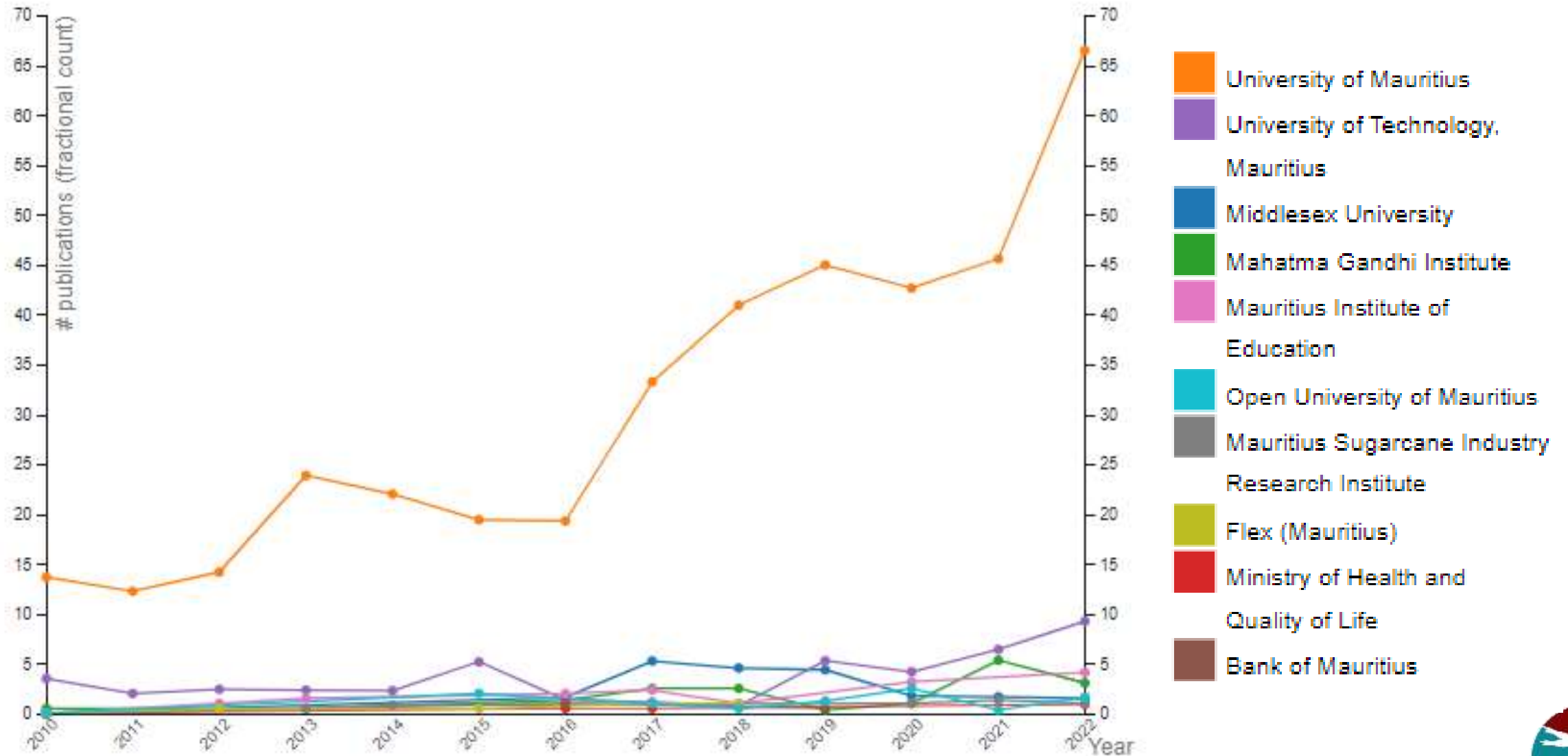# Mauritius performs well against similar countries in AI research publications – and improving sharply

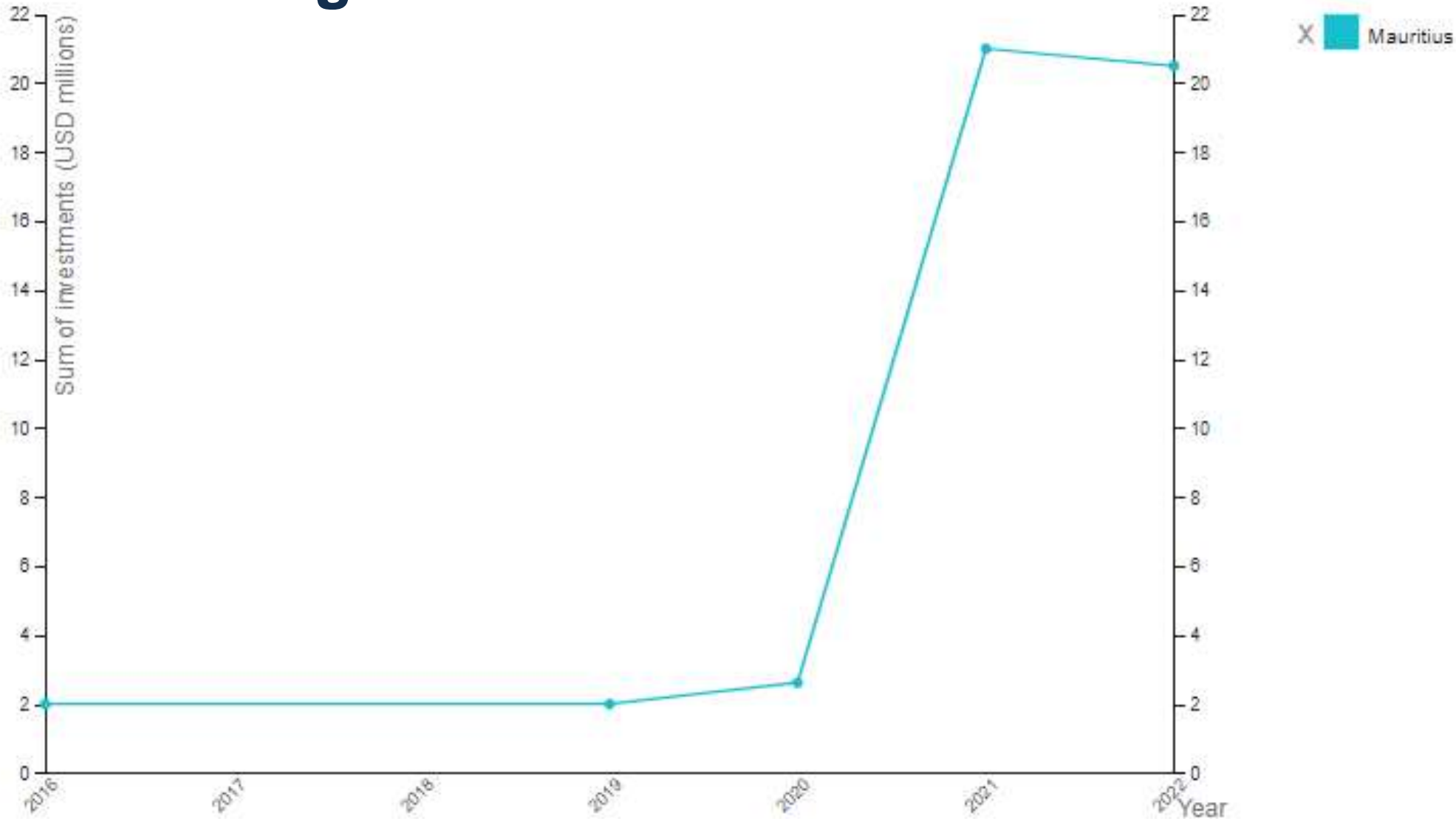Similar countries according to the Country Similarity Index

Leading Mauritian institutions in AI research
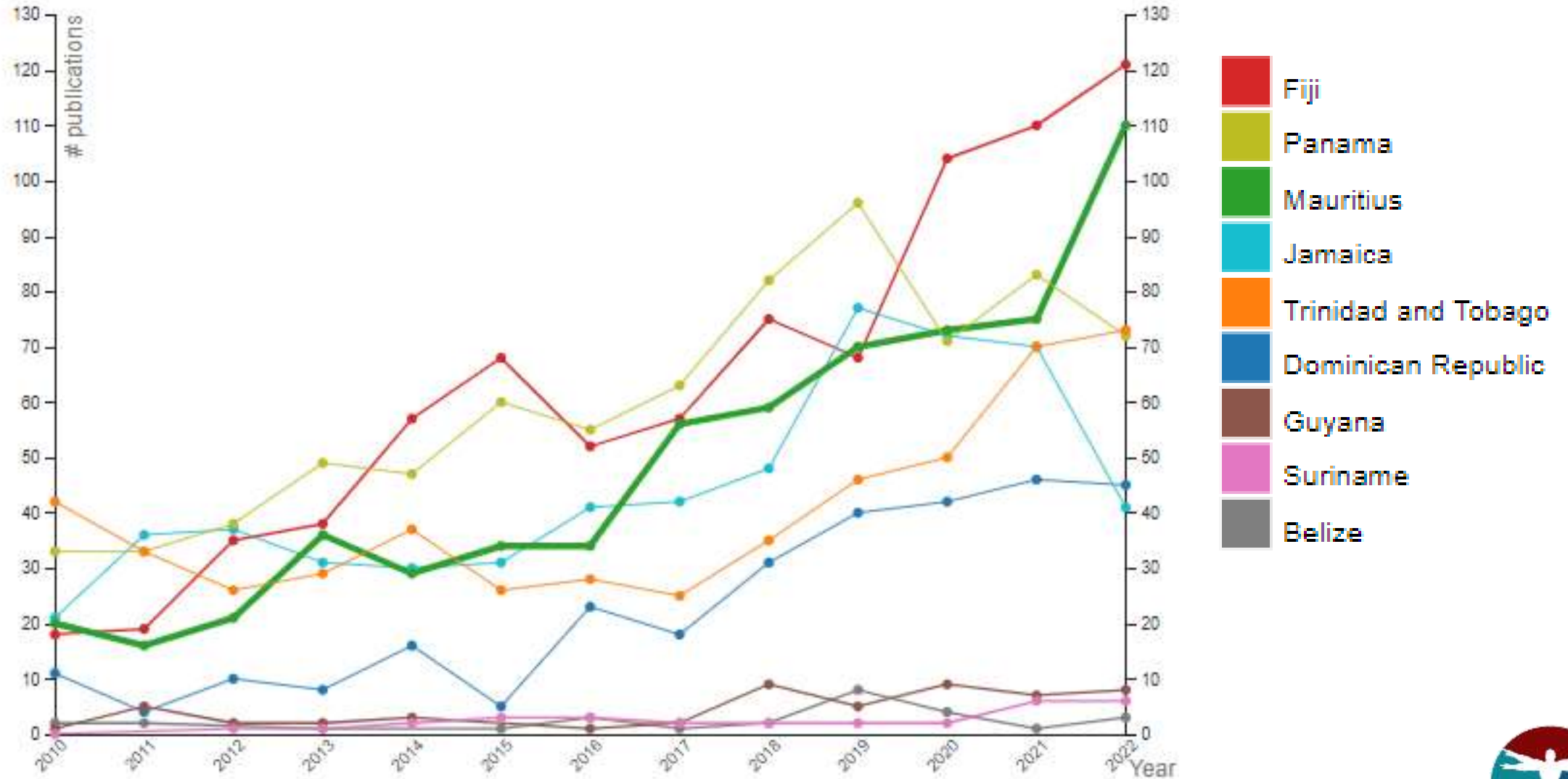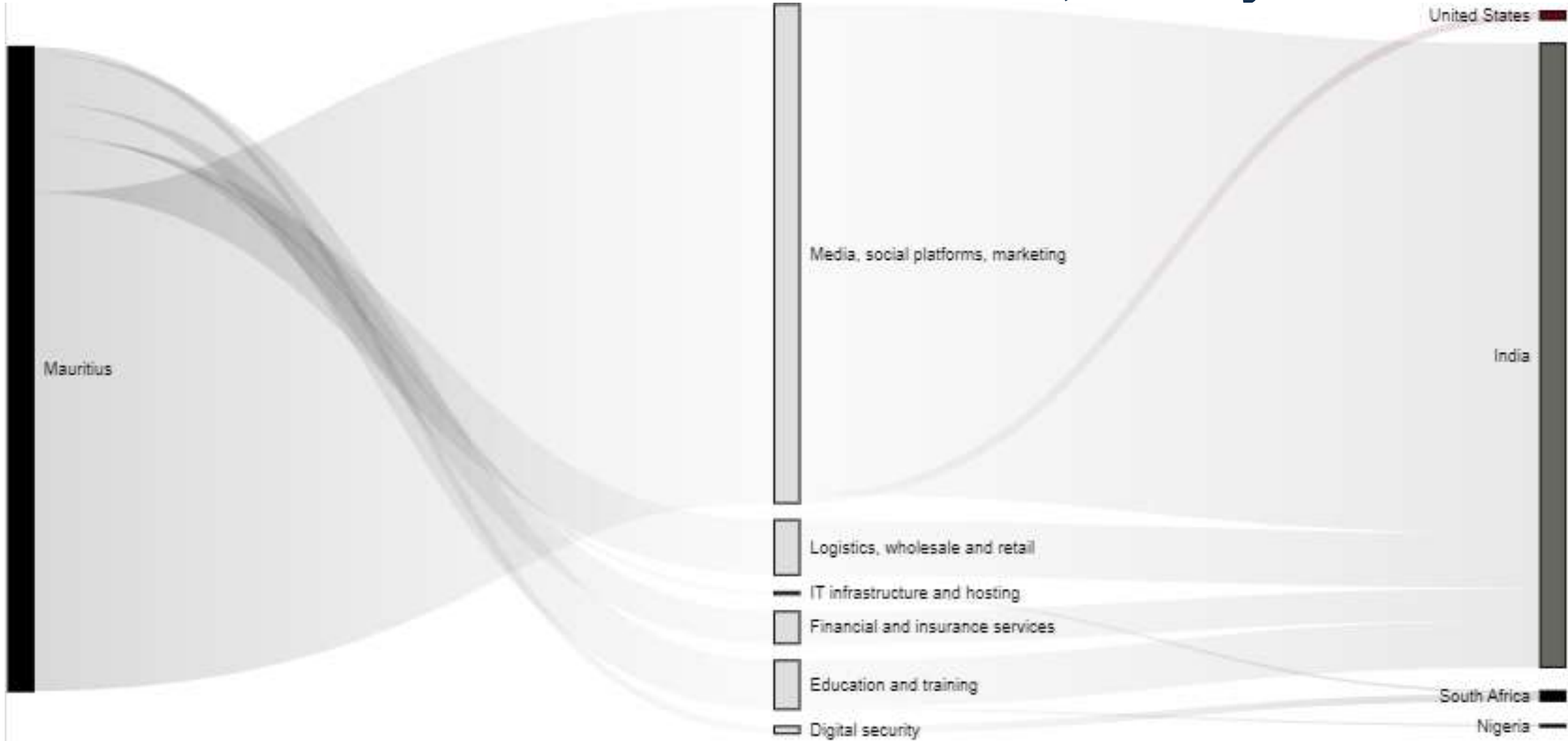

Source: OECD.AI, using data from OpenAlex

Venture capital investments in Mauritian AI start-ups are increasing

Mauritian VC outflows to foreign AI start-ups amounted to USD 101 million in 2022, mainly to India

United States

Media, social platforms, marketing

Mauritius

India

Logistics, wholesale and retail

IT infrastructure and hosting

Financial and insurance services

Education and training

South Africa

Digital security

Nigeria

Source: OECD.AI, using data from Preqin.

Other   North America   South Asia   Sub-Saharan Africa

VC inflows to Mauritian AI start-ups were 20% of outflows in 2022 (USD 21 million), mainly from the UK

United States

Unspecified

United Kingdom

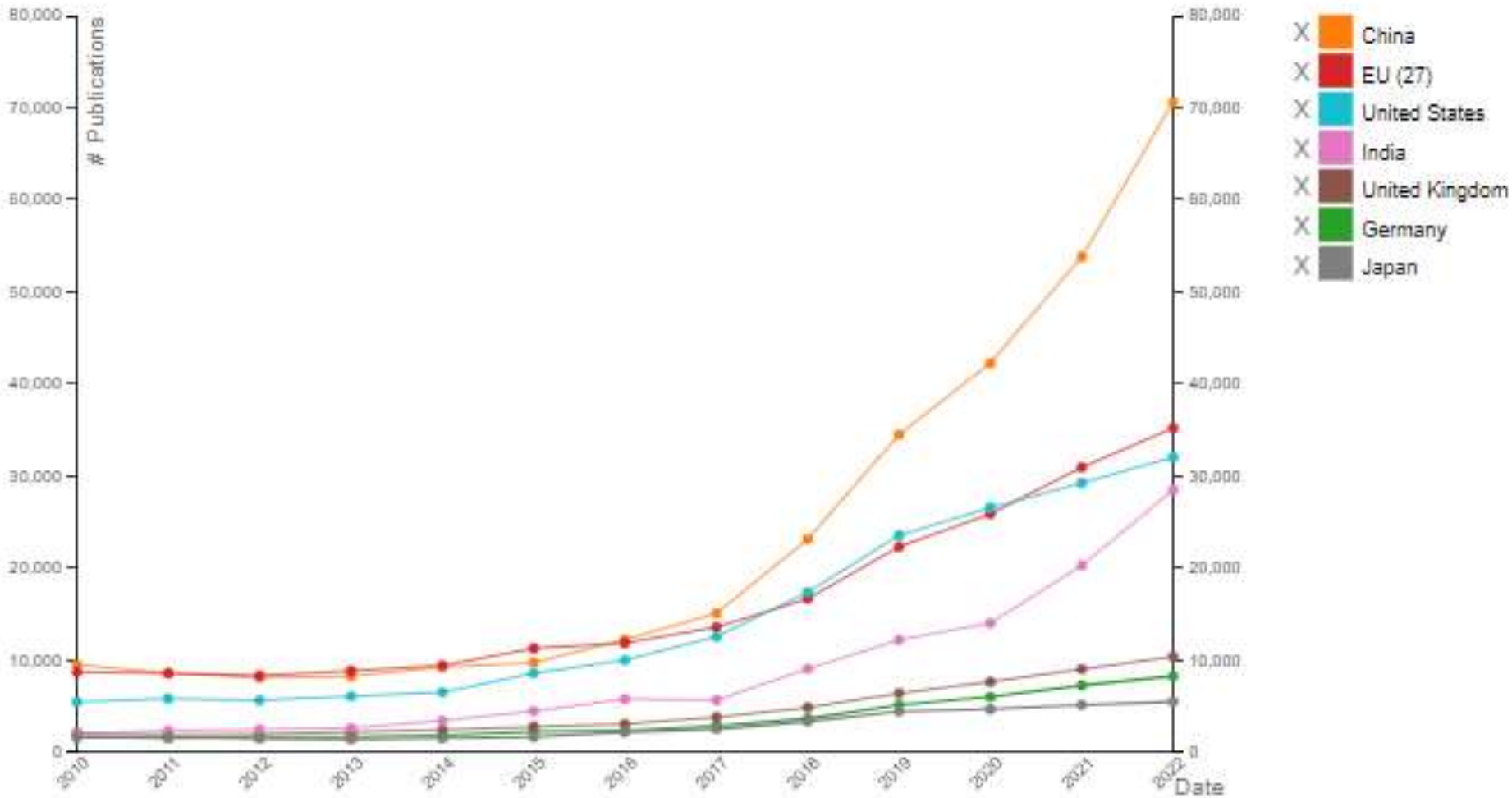Financial and insurance services

Mauritius

North America · Other · Sub-Saharan Africa · Europe & Central Asia

4. The case of India

Evolution of AI publications by country
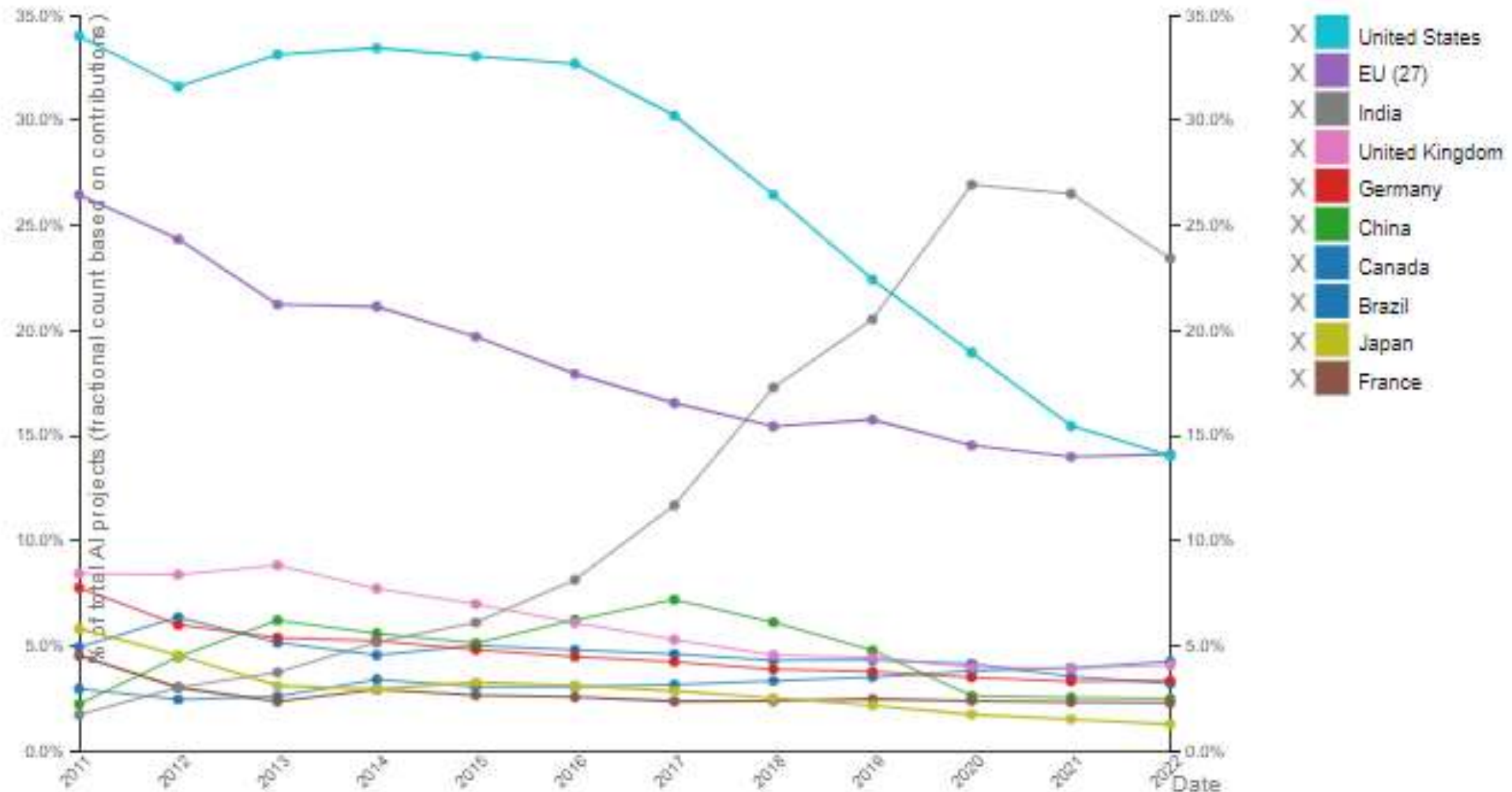## China leads in number of AI publications in academic journals

Legend:
- China
- EU (27)
- United States
- India
- United Kingdom
- Germany
- Japan

In 2019, India surpassed the US in contributions made to public AI repositories in GitHub
AI software development by country

Legend:
- United States
- EU (27)
- India
- United Kingdom
- Germany
- China
- Canada
- Brazil
- Japan
- France

Y-axis (left): % of total AI projects (fractional count based on contributions)

X-axis: Date (2011–2022)

In 2020, India surpassed the US in questions asked on Stack Overflow per year, showing an increased interest in AI upskilling
Evolution of AI questions and answers by country
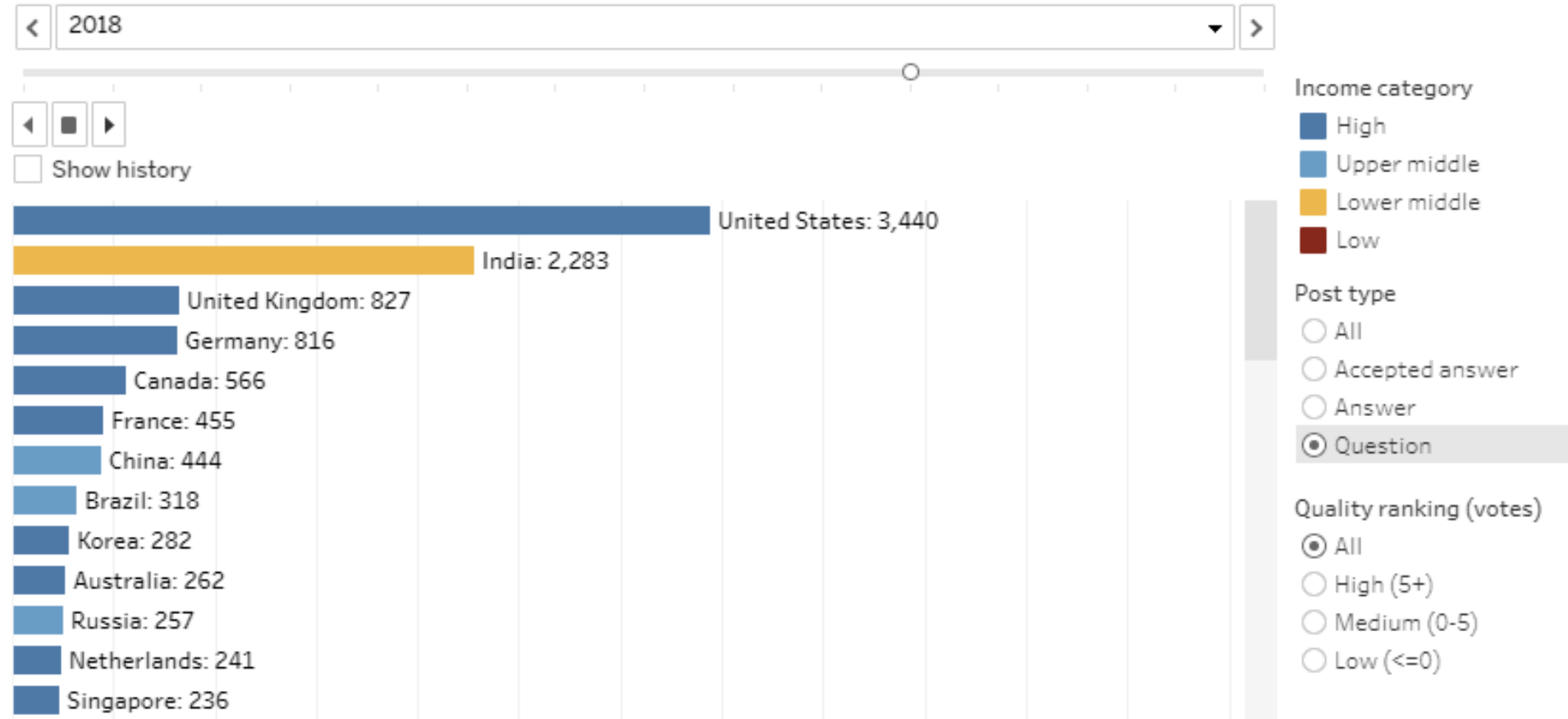
Some open questions…

- What can Africa and Mauritius learn from these trends and issues?

- What can we learn from India, with all its differences and similarities?

- What would be a good AI governance approach for African countries?

5. To learn more

To learn more

- **Learning from mistakes:** AI Incidents Monitor [oecd.ai/incidents]

- **Learning from good practices:** Catalogue of tools & metrics for trustworthy AI [oecd.ai/catalogue]

- **Staying up to date:** The AI Wonk blog [oecd.ai/wonk]

- **Comparing AI policies:** Database of national AI policies [oecd.ai/dashboards]

- **Identifying AI trends:** Trends & data section [oecd.ai/data]

- **Resources on generative AI**: GenAI section [oecd.ai/genai]

- **…and, more importantly, engage with our panellists today!**

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