



**TITLE:**

Closing the EU and India's "AI Gap": Joint Investment Schemes for Artificial Intelligence Development and Governance

**AUTHOR(s):**

Jan Hornát  
Charles University

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Jan Hornát, Institute of International Studies, Charles University

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### Introduction

In language reminiscent of early 20<sup>th</sup> century English geographer Halford Mackinder's "Heartland theory", Russian President Vladimir Putin proclaimed in 2017, "Artificial intelligence is the future...for all humankind. It comes with colossal opportunities, but also threats that are difficult to predict. Whoever becomes the leader in this sphere will become the ruler of the world."<sup>1</sup> If measured by the number of registered patents in the field, the current global leaders and aspirant "rulers of the world" are the United States and China.<sup>2</sup>

Though the EU and India are huge prospective markets for artificial intelligence (AI) technologies, they are lagging behind the two superpowers in research and development (R&D). However, both Brussels and New Delhi have clearly stated that the agenda surrounding AI – not only R&D, but also its governance and social impacts – are among their core policy priorities. The two sides have released official strategies and reports aiming to tackle the difficult issues of building "responsible", "human-centered" and "ethical" AI and to reassure the public that AI in people's everyday lives – and when employed by the governments – will be safe, transparent and dedicated to upholding democratic values.<sup>3</sup>

The question of AI has even become a key issue within the strategic framework of EU-India cooperation. The landmark document *India-EU Strategic Partnership: A Roadmap to 2025* mentions that the two sides will "Work together to share knowledge and expertise regarding artificial intelligence, scientific support to policies and regulatory aspects including ethics, and promote a dialogue in research and innovation."<sup>4</sup> Following this goal, the European Commission and India have set up an India-EU ICT Working Group. The Group has met over a dozen times and during its April 2021 session "the two sides reaffirmed their shared principles and values" and, notably, they agreed to move forward with plans to set up a joint Artificial Intelligence Task Force and hold a high-level Digital Investment Forum in the near future.<sup>5</sup>

Taking these steps is an imperative if the two partners wish to build a stronger position in the field of AI. For instance, studies have found that the EU's weakness in AI development could be offset by

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<sup>1</sup> "Whoever leads in AI will rule the world': Putin to Russian children on Knowledge Day", *Russia Today*, September 1, 2017, <https://www.rt.com/news/401731-ai-rule-world-putin/>.

<sup>2</sup> WIPO, *Technology Trends 2019: Artificial Intelligence*, [https://www.wipo.int/edocs/pubdocs/en/wipo\\_pub\\_1055.pdf](https://www.wipo.int/edocs/pubdocs/en/wipo_pub_1055.pdf).

<sup>3</sup> Of course, only time will demonstrate whether these assurances will be duly adhered to by the respective authorities. See NITI Aayog, *Responsible AI*, February 2021, <https://www.niti.gov.in/sites/default/files/2021-02/Responsible-AI-22022021.pdf>; High-Level Expert Group on Artificial Intelligence, *Ethics Guidelines for Trustworthy AI*, April 2019, <https://digital-strategy.ec.europa.eu/en/library/ethics-guidelines-trustworthy-ai>.

<sup>4</sup> *EU-India Strategic Partnership: A Roadmap to 2025*, July 2020, <https://www.consilium.europa.eu/media/45026/eu-india-roadmap-2025.pdf>.

<sup>5</sup> "India-EU Working Group advances joint commitment for digital collaboration", *European Commission*, Press Release, 23 April 2021, <https://digital-strategy.ec.europa.eu/en/news/india-eu-working-group-advances-joint-commitment-digital-collaboration>.

increased early-stage investment.<sup>6</sup> The same diagnosis arguably applies to India.<sup>7</sup> In this regard, the planned Digital Investment Forum may provide a positive platform to boost investment as it aims to bring industry leaders together to promote mutual investments in digital markets and “develop structured approaches for EU industry to invest in India and vice-versa”.<sup>8</sup> This policy paper will focus on how common investment schemes could be leveraged and how at the same time they could tackle the question of AI governance and ethics.

### The EU and India’s “AI gap”

Development of AI technologies and systems requires large-scale early-stage investment in start-ups, where both the EU and India maintain a significant gap when compared to the US and China. The United Nations’ World Intellectual Property Organization (UN WIPO) noted that for the development of AI, the United States and China have “built incredible business ecosystems” and that it will be “very difficult for other countries, even those with great education, to compete with the business, engineering and investing talent of those two countries.”<sup>9</sup> A McKinsey report on the EU’s emerging “AI gap” demonstrated that the capital invested in US startup companies was about €220 per capita, “whereas in Europe per capita investment was as low as €3 in Italy, €58 in Finland, and €123—the highest share in Europe—in Sweden”. Similarly, as of 2017 Europe had only 10 percent of the world’s “unicorns”—i.e. private startups with a value of at least \$1 billion – compared with 54 percent in the United States and 23 percent in China.<sup>10</sup> The concentration of AI technology is thus becoming vastly centralized giving the two main players significant clout in how the new technologies will operate and affect everyday lives and livelihoods.

Closing the AI investment gap and finding approaches on how to work toward the “decentralization” of AI technology is a promising point of convergence for cooperation within the EU-India strategic partnership. The potential for cooperation in the domain of AI technology development and governance is multifaceted and considerable on both sides – the Indian Government and the European Commission are active in exploring and setting ethical standards for AI in their home markets; on the downside, both suffer from significant brain drain to the point that the inability to retain talent has “crippled India’s capability to develop state-of-the-art AI”.<sup>11</sup> While the US retains 82-92 percent of its AI Ph.D. graduates, India is labeled a “producer” country for AI talent with significant outflows and low inflows.<sup>12</sup>

Needless to say, AI prominence is not only about technological supremacy and job creation but to a large extent concerns the question of societal values. It has been well-documented that AI

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<sup>6</sup> Jacques Bughin et al., *Notes from the AI Frontier: Tackling Europe’s Gap in Digital and AI*, McKinsey Global Institute, February 2019, <https://www.mckinsey.com/~media/mckinsey/featured%20insights/artificial%20intelligence/tackling%20europes%20gap%20in%20digital%20and%20ai/mgi-tackling-europes-gap-in-digital-and-ai-feb-2019-vf.pdf>.

<sup>7</sup> Shamika Ravi and Puneeth Nagaraj, “Harnessing the future of AI in India”, *Brookings Institution*, October 18, 2018, <https://www.brookings.edu/research/harnessing-the-future-of-ai-in-india/>.

<sup>8</sup> “India-EU Working Group advances joint commitment for digital collaboration”, *European Commission*, Press Release, 23 April 2021, <https://digital-strategy.ec.europa.eu/en/news/india-eu-working-group-advances-joint-commitment-digital-collaboration>.

<sup>9</sup> WIPO, *Technology Trends 2019: Artificial Intelligence*, [https://www.wipo.int/edocs/pubdocs/en/wipo\\_pub\\_1055.pdf](https://www.wipo.int/edocs/pubdocs/en/wipo_pub_1055.pdf), p. 9.

<sup>10</sup> Bughin et al., *Notes from the AI Frontier*, p. 7.

<sup>11</sup> Kashyap Raibagi, “AI Ecosystem: Where Does India Stand Compared To The US & China”, *Analytics India Magazine*, 19 April 2021, <https://analyticsindiamag.com/ai-ecosystem-where-does-india-stand-compared-to-the-us-china/>.

<sup>12</sup> *Global AI Talent Report 2020*, <https://jfgagne.ai/global-ai-talent-report-2020/>.

technologies can be exploited for various malign purposes – either by private AI developers willing to break ethical barriers for profit-seeking and by governments employing the new technologies to more effectively monitor and sway their own – and foreign – populations.

For instance, repression of populations is facilitated by easily available surveillance technologies that employ AI to track real or potential dissidents and unwanted civil society leaders in real time. At least 75 countries in the world have adopted AI surveillance technologies, with China being a key provider.<sup>13</sup> Moreover, algorithms that underlie AI software designed with the use of machine-learning and big data may be (un)intentionally biased to disfavor certain social groups or minorities. It has been reported that an AI tool used in courtrooms across the US to predict future crimes and help make decisions about pretrial release and sentencing – the Correctional Offender Management Profiling for Alternative Sanctions (COMPAS) – was biased against defendants of color.<sup>14</sup> Without some level of transparency of algorithms and some exposure of machine-learning input data, AI-based systems cannot be entrusted with automated decision-making as they may further the political goals of (not only) authoritarian states under the smokescreen of objectivity and neutrality.

In the exploitation of AI lies a challenge particularly for liberal democratic states. The relative openness of their governments, economies and societies toward the outside world in terms of trade of goods and services, as well as ideas and communication, makes them particularly vulnerable to malicious attacks and influence by foreign entities. For these geopolitical reasons, it should be a priority for the EU and India to step up and work jointly to close the emerging global “AI gap”.

### Policy recommendations

This policy paper provides three recommendations for closing the “AI gap” both India and the EU are facing compared to the US and China. Cooperation in the following realms will present a win-win opportunity in developing and governing AI and will also add to bilateral trust-building and increased socialization. Moreover, the recommendations could be part of the upcoming Digital Investment Fora debates mentioned above.

#### 1. Tie public investments to ethical and transparency standards

As mentioned earlier, both the EU and India lag behind the US and China in early-stage investment availability for AI development. Public investment policy coordination in the realm of artificial intelligence could be a particularly viable way of strengthening cooperation among India and the EU. Such coordination could eventually lead to the pooling of resources to invest in financially-intense projects or those that increase the security and resilience of democratic societies, such as detecting AI-generated “deep fakes”.<sup>15</sup> Importantly, the coordination of investments could also involve the embedding of certain (ethical) standards in the new AI technologies being developed with public investments. For instance, the European Commission’s High-Level Expert Group on Artificial Intelligence (AI HLEG) produced *Policy and*

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<sup>13</sup> Steven Feldstein, *The Global Expansion of AI Surveillance* (Carnegie Endowment for International Peace, 2019), <https://carnegieendowment.org/2019/09/17/global-expansion-of-ai-surveillance-pub-79847>; Paul Mozur and Aaron Krolik, “A Surveillance Net Blankets China’s Cities: Giving Police Vast Powers”, *New York Times*, December 17, 2019, <https://www.nytimes.com/2019/12/17/technology/china-surveillance.html>.

<sup>14</sup> Will Douglas Heaven, “Predictive policing algorithms are racist. They need to be dismantled”, *MIT Technology Review*, July 17, 2020, <https://www.technologyreview.com/2020/07/17/1005396/predictive-policing-algorithms-racist-dismantled-machine-learning-bias-criminal-justice/>.

<sup>15</sup> Jared Cohen and Richard Fontaine, “Uniting the Techno-Democracies: How to Build Digital Cooperation”, *Foreign Affairs*, November/December 2020, <https://www.foreignaffairs.com/articles/united-states/2020-10-13/uniting-techno-democracies>.

*Investment Recommendations for Trustworthy AI*, which included the proposition that the Commission “work with European financial institutions ... to develop investment guidelines that take into account the Ethics Guidelines”<sup>16</sup>. In practice, this could mean that investments into new AI technologies could be conditioned on meeting predefined ethical criteria and other standards (such as gender equality) that meet both sides’ aspirations of a human-centered, responsible and trustworthy AI.

**2. Invest in creating a certification process for “safe AI technologies”**

Certification by a third-party subject is a standard procedure that provides a formal attestation or confirmation of certain characteristics of an object. As both India and the EU are concerned about the possible malign effects of AI use, a joint certification of AI technologies entering their markets would be a boon for the governance of these technologies and place the two at the forefront of AI standard-setting. The certification would be tied to the transparency, openness, trustworthiness and responsibility of a given AI technology. Of course, a prerequisite for designing a certification process would be a common set of ethical standards agreed to by both sides, which may not be easy to achieve. However, given their market potential for global AI developers, EU-India ethical guidelines on the development and use of AI technologies would greatly support their individual efforts at creating benign AI systems.

**3. Invest in the exchange of best-practices and pool resources for reskilling workforce**

As both the EU and India face problems of retaining and attracting AI talent, a coordinated effort for increasing the human potential slowing down the “brain drain” is a possible avenue for cooperation. The starting points of India and the EU are very different – each partner has different levels of literacy and percentages of population with higher education. Even though India is in the top ten nations with respect to the number of PhDs in AI programs, on a per capita basis its position looks much more bleak. All the more, a platform for an exchange of knowledge on reskilling and educating a workforce both to be able to develop new AI technologies, but also to implement and use them, could be of crucial importance – especially for India. Furthermore, pooling resources for joint centers of excellence conducting R&D in AI and analyzing the impacts of AI on the global workforce may produce solutions to challenges that bother not only the EU and India.

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<sup>16</sup> High-Level Expert Group on AI, *Policy and investment recommendations for trustworthy Artificial Intelligence*, June 2019, <https://digital-strategy.ec.europa.eu/en/library/policy-and-investment-recommendations-trustworthy-artificial-intelligence>.