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Navigating the Digital Dragon: China's Approach to Artificial Intelligence

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Politics of Artificial Intelligence

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Navigating the Digital Dragon: China's Approach to Artificial Intelligence

Introduction

Within the framework of the topic "AI & Politics," this paper examines the integration of artificial intelligence into the socialist system of the Communist Party of China (CCP) in light of international ideological differences in the AI arms race between China and the USA: How does China handle AI? This paper considers AI as a tool for internet security, censorship, surveillance, and the production of party-compliant content or propaganda. The aim of the study is to identify the role of AI in the dissemination and communication of political realities. In doing so, this essay attempts to understand and portray the entirety of the CCP's actions through a cultural relativistic approach as a coherent ideology.

Context

This chapter addresses China's influence on the global AI industry, with the Cyberspace Administration of China serving as the authority responsible for managing the domestic internet via the Great Firewall. It is important to note the use of Virtual Private Networks (VPNs), which allow Chinese citizens to access the internet outside of China. To enhance the understanding of this essay, it is valuable to provide a brief overview of the surveillance situation in China, where AI also plays a crucial role.

China's Claim in the AI Industry

China and the West are engaged in an AI arms race (Rangaraj 2023; Martin 2023; AP News 2024)—a "Sino-US technology Cold War" (Segal 2019). In 2017, the CCP released an action plan aiming to establish China as a major center for AI development by 2030, highlighting domestic tech giants Baidu, Tencent, Alibaba, and iFLYTEK as potential leaders (Talebi 2021, 36; Lin 2024, 1126–27). While U.S. companies invested around \$47 billion annually in AI projects (DeGeurin 2023), China invested approximately \$10 billion annually, with projections to reach about \$26 billion by 2026 (Martin 2023). As an authoritarian state, China aims to export both its digital framework of surveillance technologies and its accompanying ideology on a global scale as a Chinese alternative to the West (Talebi 2021, 39). Talebi describes this competitive phase, wherein China seeks to recalibrate its power dynamics with Western democracies, as "The Great Digital Contest" (Talebi 2021 *ibid.*).

Furthermore, China faces a hardware challenge: For example, ChatGPT operates on, among other things, a significant infrastructure of Nvidia A100 and H100 high-

performance GPUs. The Biden Administration in the U.S. has imposed restrictions on the sale of such GPUs to China to hinder China's ability to develop a ChatGPT alternative (Rangaraj 2023). To tackle the shortage of AI chips, China is pursuing four main strategies: first, stockpiling large supplies of AI chips; second, upgrading domestic manufacturing processes; third, illegally importing chips through third parties; and fourth, utilizing offshore AI services in regions such as Europe or the Middle East (Wang 2024). It seems only a matter of time before China develops alternative chatbots with computational capabilities similar to ChatGPT.

The Cyberspace Administration of China (CAC)

The Cyberspace Administration of China (CAC) traces its roots to the CCP's propaganda system, emerging from the State Internet Information Office (SIIO) in 2011 and undergoing a fundamental restructuring in 2018 as part of the Central Cyberspace Affairs Commission (CCAC) (Horsley 2022). The CAC functions as both a party and state organ and focuses on internet administration within the Great Firewall of China (GFW) with an emphasis on cybersecurity, data security, and privacy (Horsley 2022). It fulfills its role by censoring the internet within the GFW according to the CCP's ideological guidelines.

Yan and Li, whose sources I gratefully adopted, report on the diverse array of censorship tools (Yan and Li 2023), which include (1) blocking information sources (MacKinnon 2008), (2) selectively deleting state-critical messages (Stockmann 2015), (3) distraction tactics (Roberts 2019; Sanovich, Stukal, and Tucker 2018), (4) interference by state-employed trolls (King, Pan, and Roberts 2017; Han 2015), and (5) mandating self-censorship by social media platforms like WeChat (Ruan et al. 2021). Censorship must be applied carefully: "[T]he state enforces information control and repression with a scalpel rather than a hammer" (Gallagher and Miller 2021, 1012). Arbitrary censorship risks drawing more attention to the censored elements, potentially bringing them back into societal focus (Yan and Li 2023, 3–4).

The CAC is also responsible for the registration, control, and evaluation of AIs and algorithms according to CCP criteria (batch-testing) (McMorrow and Hu 2024). Aiming to develop AI with socialist characteristics, the CAC seeks to block and censor any potentially sensitive questions and answers, such as those concerning the political legitimacy of the state president (McMorrow and Hu 2024). To maintain user engagement and gather more training data from extended conversations for AI development, newly registered chatbots must not exceed a limit of evading more than 5% of questions in the CAC's so-called "safety test" (cf. McMorrow and Hu 2024).

The Great Firewall of China (GFW)

The Great Firewall of China (GFW), officially known as the "Golden Shield Project," is a collective term for the legislative and technological restrictions of the internet in China (Fan and Guan 2023, 413). It was conceived in the late 1990s and became operational in the early 2000s (Griffiths 2019). The GFW is an extensive system of internet censorship and control mechanisms designed to block access to undesirable foreign websites and monitor the dissemination of sensitive political content. Its goal is to ensure the information supremacy of the Chinese government and protect the population from influences deemed harmful to the socio-political stability of the People's Republic.

AI and algorithms assist in monitoring, evaluating content, and enforcing censorship (Cook 2023). Although a Virtual Private Network (VPN) can only bypass some of the censorship mechanisms of the GFW (Fan and Guan 2023, 416), the GFW employs multiple censorship mechanisms to control data traffic: **(a)** from outside China into the country and **(b)** within the country. These include: **(1)** Using domain filters to block specific domains and IP addresses, mostly of foreign websites, that do not align with the CCP's ideological guidelines or contain topics like pornography and gambling (Fan and Guan 2023, 416; cf. Ensafi et al. 2015, 61 ff.). This involves distinguishing between IP blocking and DNS poisoning (RealLifeLore2 2019).

(2) The GFW also employs various algorithmic content filters that intercept and delete undesirable posts based on a database of sensitive buzzwords (Davies 2024; McMorrow and Hu 2024). Other algorithmic content filters first analyze internet data in the form of Transmission Control Protocol (TCP) packets and evaluate each data flow against a score criterion regarding its "abnormality"; if the score deviates from the norm, the data traffic is blocked (Fan and Guan 2023, 416). This particularly targets topics on China's contemporary history since the founding of the CCP in 1921, alternative interpretations of the Chinese Cultural Revolution, personal experiences of repression, moral values such as Western liberalism or Christianity, and Marxist fundamentalism (Yan and Li 2023, 7–8). Metaphysical, economic-theoretical, sociological, or cultural discourses, as well as news about negative events abroad or poor relations with the USA, are rarely censored (Yan and Li 2023, 8). Finally, content filtering is outsourced as a form of self-censorship to social media platforms like WeChat (RealLifeLore2 2019).

(3) Lastly, the so-called blacklisting completely blocks certain social media accounts of specific individuals indefinitely, often permanently, and frequently irrespective of the content published by these individuals (Yan and Li 2023, 9 ff.). This censorship is usually triggered by a person's public influence, political status, or foreign experience that may have been inspired by Western ideologies, potentially spreading

these values, or by addressing taboo topics or directly criticizing politicians (Lèse-Majesté) (Yan and Li 2023, 9–10).

Most filtering occurs in liminal Autonomous Systems (AS), with ChinaNet and CNCGroup employing different strategies: ChinaNet distributes its filtering devices across regional networks to facilitate the censorship of domestic data traffic, while CNCGroup primarily places its IDS devices in the backbone, enabling centralized control (cf. Xu, Mao, and Halderman 2011, 141 ff.). An AS is a collection of IP prefixes controlled by a single network operator or organization that uses a common routing strategy to manage traffic between networks. The study identified 495 router interfaces with filtering devices, with ChinaNet possessing 97.4% and CNCGroup 17.4% of these interfaces (ibid. Xu, Mao, and Halderman 2011).

Circumventing Censorship with Virtual Private Networks (VPNs)

To use services like ChatGPT, some Chinese students and teachers bypass the censorship of the GFW by purchasing U.S. phone numbers or logins on the online platform Taobao and using VPNs (The Straits Times 2023; Rangaraj 2023; Campbell 2023; cf. RealLifeLore2 2019). Students increasingly use U.S.-based chatbots as an affordable alternative to expensive online English test preparation courses, which cost about 600 yuan per hour and are required for applying to universities in the EU and USA (The Straits Times 2023). For instance, once students could easily request learning materials from ChatGPT, the stock price of the educational technology company Chegg dropped by 50% (Rangaraj 2023).

AI Surveillance

AI is extensively applied in surveillance technologies, including facial recognition software and network infrastructure evaluation programs using CCTV cameras. While the USA has about 50 million CCTV cameras, China has around 200 million, with Shanghai alone accounting for 12.83 million (Feng 2019; Slotta 2024). The government aims for comprehensive 360° surveillance, as exemplified by initiatives like the "Sharp Eyes" project (Gershgorin 2021; Ka 2024). According to an informant who was robbed in a public space in Beijing, the police were able to trace the location and time of the incident, identify the perpetrators, and return the stolen property within 24 hours. Another informant mentioned that theft is rare due to the pressure to conform induced by pervasive surveillance.

In 2019, a data leak from the company SenseNet revealed its operations for monitoring Uyghurs and other Muslim minorities in Xinjiang, as well as Miao and Qiannan Buyi minorities in the city of Duniyun. Approximately 1,000 cameras were installed at mosque entrances, and a database was created to track nearly 2.6 million people in

real-time through crowd analysis to allegedly prevent illegal gatherings (Murgia and Yang 2019).

China's Ideological Positioning

As previously mentioned, this essay analyzes the actions of the CCP, particularly through the Cyberspace Administration of China, as part of a coherent ideology. Following this introductory overview of China's influence on the global AI industry, this chapter explores the concept of ideology and examines the extent to which AI is compatible with China's socialist ideology. Furthermore, it highlights the ideological differences between China and the West, the challenge posed by Western AIs to China, and how these are regulated by the CCP. Finally, it discusses the potential for Chinese ideology to transcend national boundaries.

Concept of Socialist Ideology

Ideologies are systems of knowledge, beliefs, and values shared by a particular social group, serving as a framework for assessing social, political, and economic issues. Such ideologies, including liberalism, socialism, and conservatism, often form the foundation for political movements and governmental structures. Karl Marx and Friedrich Engels viewed ideology as an instrument of domination, manifesting in the material world where capitalists, through their wealth, also dominate the intellectual sphere and influence socially weaker individuals (cf. Bluhm and Bohlender 2010, 40 ff.). During China's modernization, Mao Zedong used the Marxist concept of ideology as a strategy against imperialism and capitalism, initiating a movement for economic independence from Western power structures (Mao 1958). This perceived hegemonic position of the West stems from its central role in military, economic, political, and scientific areas, forming a Eurocentric center. President Xi Jinping practices a form of Chinese socialism that blends Mao's Marxism with Deng Xiaoping's economic liberalization and nationalism (Fitrah 2022).

Censorship also brings certain economic advantages concerning China's goal of economic independence from U.S. service companies. Censorship not only prevents the spread of foreign ideologies or unwanted domestic commentary but also shields the local market from influential foreign corporations with monopolistic positions, giving domestic digital companies a developmental advantage (Fan and Guan 2023, 413). Concerning the long-term process of "decolonization" in Global South countries resisting material asymmetry in achieving equitable digitalization (cf. Udupa and Dattatreyan 2023, 9), this specific Marxist ideology represents a successful strategy for China to maintain its technological sovereignty through material independence.

Both tech billionaires in Silicon Valley (Udupa and Dattatreyan 2023, 6) and politicians in China share the belief that technology and innovation, including AI and

algorithms, can solve all human problems if applied correctly (Creemers 2020, 66–67). However, AI in China must adhere to the CCP’s socialist values, which often proves problematic (Davies 2024). A primary goal of the CCP is to establish social order and maintain stability, partially through societal engineering (Creemers 2020). One approach to ensuring stability is the depoliticization of all areas of life (cf. Keilhack 2022). On behalf of the CCP, the CAC implements strategic censorship and propaganda, employing methods such as distorting facts, altering narratives, or erasing historical events from public memory (Talebi 2021, 37; Yan and Li 2023, 1). Censorship especially intensifies during political events, such as the Tiananmen Square Protest Memorial, National Cybersecurity Week, the National Day, and the CCP National Meeting, to mitigate the risk of social escalation (Fan and Guan 2023).

Ideological Differences Between China and the West

In the context of AI, the ideological differences between China and the West are particularly reflected in how this technology is developed and deployed. **(1)** In China, AI is heavily state-supported and often used to bolster surveillance measures and national security to ensure social stability and control. In contrast, in the West, AI is primarily driven by private companies, focusing on profit, innovation, and competitiveness. **(2)** China allows broader access to personal data, enabling authorities to utilize extensive datasets to improve AI systems. In contrast, Western countries are more constrained by data privacy laws, which limit access to personal data and emphasize privacy protection. **(3)** While the West tends to promote international cooperation in AI technology, China seeks both cooperation and technological independence to enhance its technological sovereignty. **(4)** The Chinese government focuses on aligning AI with socialist values, whereas Western discourses on AI often engage with ethical principles such as transparency and the prevention of bias, discrimination, and stereotypes (cf. The Artificial Intelligence Channel and Crawford 2017; Johnson 2021). In contrast to the CAC, the ethical suitability of AI is assessed in the EU by various bodies, such as the High-Level Expert Group on Artificial Intelligence (cf. European Commission 2024), and in the USA by voluntary ethics committees within companies.

Incompatibility of Western AIs

AIs and their training data are inherently biased. Word embeddings are a technique for textual representation, where each word is mapped to a vector in an n-dimensional space to capture relationships between words through spatial distances (E. Yang and Roberts 2021, 2). Words with similar meanings are positioned closer together in this vector space (E. Yang and Roberts 2021 *ibid.*). Pre-trained word embeddings can quickly provide more accurate results, especially when based on large text corpora such as Wikipedia (E. Yang and Roberts 2021 *ibid.*). However, these embeddings can also reflect existing biases in language, such as gender stereotypes (E. Yang and

Roberts 2021 *ibid.*). Therefore, it is crucial that training datasets adequately represent the population to which the algorithm will be applied (E. Yang and Roberts 2021 *ibid.*). The CCP attempted to feed an AI chatbot with the work “Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era” (McMorrow and Hu 2024). Ontologically speaking, however: “What does unbiased look like in these circumstances, and how would one test it?” (E. Yang and Roberts 2021, 8).

The CCP perceives any criticism as a threat. For example, if ChatGPT is asked about the legitimacy of President Xi Jinping, it might mention aspects like stability and economic growth, as well as political repression and human rights violations; such a negative portrayal of the president is not permitted (Campbell 2023). Consequently, ChatGPT—originally available through Tencent on WeChat and by Ant Group—was banned by the CAC for allegedly spreading foreign propaganda (The Straits Times 2023). While GPT-4o achieved a “safety compliance rate” of 7.1% in a study at Fudan University in Beijing, the ByteDance LLM chatbot Doubao Pro received the highest rating with 66.4% (McMorrow and Hu 2024). When asked about President Xi Jinping’s legitimacy, Doubao responded with a list of achievements (McMorrow and Hu 2024).

In the past, there have been trends of asking chatbots about their political preferences (cf. Oswald 2024). Rozado examined 24 conversational language models (LLMs) trained through Supervised Fine-Tuning (SFT) and sometimes Reinforcement Learning (RL), as well as 5 foundational models, including ChatGPT3 and Llama2, using 11 tests to identify political preferences (Rozado 2024, 2). SFTs are politically oriented embeddings, whereas RL is an additional training process with human or machine feedback (Rozado 2024, 2 ff.). Rozado identified a slight preference in the foundational models, particularly in LLMs influenced by SFTs and RLs, for the political center-left spectrum, characterized by attributes such as left-libertarian, social democratic, green, equality, progressivism, and culturally liberal (Rozado 2024, 6–10). He notes the risk that conventional information sources could be displaced as data foundations, potentially influencing public opinion, voting behavior, and social discourse (Rozado 2024, 12).

Regulations by the CCP

According to some informants in China, it is important to understand that the Chinese legal system functions differently on a civil level compared to the West: laws are not primarily designed to protect citizens but rather to educate them on one hand, and provide the state with grounds to legally prosecute them if these laws are broken. Laws in China are often structured such that individuals frequently violate them—for instance, the use of VPNs or ChatGPT is prohibited. Nonetheless, the barrier to entry is low and the risk of punishment is minimal, leading many Chinese citizens to bypass

the GFW. Once individuals become notable and draw the attention of authorities, the state has sufficient evidence and justification to take action against them.

Not only individuals but also Chinese companies are subject to iterative laws of the CCP. On July 2, 2021, the CAC imposed a cybersecurity review on the Chinese service company DiDi Global following its successful IPO in the U.S., and later imposed a \$1.2 billion fine for violations of security and privacy laws (Horsley 2022; De-Geurin 2023). Chinese tech companies, as part of their self-censorship responsibilities, often have to perform a balancing act. In 2022, Baidu's ERNIE-ViLG text-to-image generator was released with certain censorship protocols, such as restrictions on images related to Tiananmen Square, political figures, and terms like "revolution" and the metaphor "climbing walls," which represents overcoming censorship mechanisms (Cook 2023).

Regarding recommendation algorithms, chatbots, and image generators, the CCP has released some of the earliest and most detailed regulations worldwide: **(1)** Regulations for recommendation algorithms in 2021, **(2)** rules for synthetically generated content (deep synthesis) in 2022, and **(3)** a draft for regulating generative AI in 2023 (Sheehan 2023, 4–5). The early publication of iterative and specific regulations aims not only to protect against foreign influences but also to set stringent standards for AI technologies that will shape production and future research beyond China's borders (Sheehan 2023, 16). This raises the question of how the CCP balances strict state control with progressive innovation in light of the burgeoning Chinese AI industry (Sheehan 2023, 14). Companies in the AI industry fear an increased risk of leaks from sharing datasets, which could lead to user distrust and the loss of their competitive advantage in the market (Creemers 2020, 68).

(1) The regulations governing the management of recommendation algorithms for internet information services include banning algorithmic price discrimination, protecting the rights of vulnerable platform workers, prohibiting the promotion of excessive consumption and inducement to addiction, and granting individuals the right to disable algorithmic recommendation services, delete personalization tags, and receive an explanation of algorithmic influences (Sheehan 2023, 12–13). Additionally, AIs and algorithms must be state-registered and are subject to a safety self-test and report, during which the training data and phases are reviewed (Sheehan 2023, 13). **(2)** The management of "Deep Synthesis" internet information services aims to counteract deepfakes in particular: generated content must respect the correct political line, not endanger social and economic order, avoid inciting unrest, and be appropriately labeled as synthetic material (Sheehan 2023, 13–14). **(3)** The measures for managing generative AI services include requirements for a truthful, accurate, objective, and diverse

representation of training data in alignment with socialist values and the avoidance of discrimination (Sheehan 2023, 14–15).

China's AI Foreign Policy

China is the largest foreign investor in information and communication technology (ICT) in Africa (Lin 2024). As a subsidiary digitization project of the Belt and Road Initiative (BRI), Chinese companies like Huawei and CloudWalk export smart city concepts and telecommunications and surveillance infrastructure to over 38 countries so far (Lin 2024; Talebi 2021). They install fiber optic cables, mobile networks, satellite relay stations, data centers, and smart city grids, providing loans and investments totaling \$17 billion (Talebi 2021, 38). China installs facial recognition infrastructure in Uganda, Zambia, Botswana, Egypt, Ghana, Kenya, Nigeria, and South Africa (Lin 2024). Additionally, the Chinese telecommunications provider ZTE equips 50 countries, including Ethiopia, Laos, Nigeria, Sri Lanka, Turkey, and Sudan, with surveillance systems and data centers (Talebi 2021, 37).

China's AI foreign policy can generally be summarized as aiming to establish mutual international relations to open up new markets for Chinese products. Although the CCP and Chinese tech companies have purely capitalist interests, many Western media outlets express concern about the export of China's socialist ideology (cf. Lin 2024). This Western concern might be somewhat overstated, as African countries also source surveillance equipment from Western nations such as the UK, Germany, Italy, and Israel, raising issues about their autonomy (Lin 2024, 1135). Moreover, there is no empirical evidence linking the use of Chinese surveillance equipment to a decline in democratic practices (Lin 2024, *ibid.*).

The Political Role of AI in China

AI is utilized in various applications in China, whether as chatbots, surveillance, or filtering systems. The CCP aims to shape AI to serve its agenda: on one hand, to protect the Chinese population from foreign AI influences, and on the other, to strive to become a global leader in AI technologies and developments (Sheehan 2023, 17). Excessive demands on the domestic AI industry and too many political restrictions in the form of bureaucracy could negatively impact AI development (Campbell 2023). The CCP feels compelled to promote AI to stay competitive; a successfully regulated AI serves as a propaganda tool to disseminate its own ideological values (Campbell 2023).

The Race for Training Data

Developing AI systems requires vast amounts of training data. Many Western media outlets speculate that China faces significant challenges in developing AI with

socialist characteristics that align with the CCP's political line without distortion. The CAC struggles to translate information and knowledge from Western media and institutions into Chinese and filter it to fit the CCP's criteria. However, the Chinese government may not need foreign training data, as it has been building a steadily growing dataset through the Great Firewall since 2014, aligned with the ideological principles of the CCP. Nonetheless, a significant portion of the content may be of low quality, such as spam messages and advertisements (Z. Yang 2024).

When a population uses digital platforms, it generates content that can be used as training data for AI. The greater the population's participation in the internet, the larger the output. In June 2023, approximately 1.08 billion internet users were registered in China, marking an internet penetration rate of about 76.4 percent (Statista Research Department 2024a). In the USA, the number of internet users in 2024 reached about 331 million, corresponding to a penetration rate of nearly 97 percent, a new peak (Statista Research Department 2024b). China shows significantly higher growth potential for potential training data: users' personal data can be regarded as digital capital feeding the Chinese AI industry in line with Chinese Marxism. The Great Firewall acts as a wedge between the Chinese internet sphere and the Western one, reinforcing ideological and independently growing internet realities. Simply put, the AI arms race partly involves manpower.

Censorship and propaganda increasingly influence, for example, the development of online encyclopedias, which are often used as training data for NLP algorithms (E. Yang and Roberts 2021, 1 ff.). After the Chinese version of Wikipedia was blocked in China starting on May 10, 2015, it lost a large portion of its Chinese users, resulting in few new contributions. On the other hand, the alternative online encyclopedia Baidu Baike grew to 16 million entries by 2019, sixteen times larger than the Chinese version of Wikipedia (E. Yang and Roberts 2021, 1–2). Baidu Baike presents an attractive data source for future Chinese language models, aligning with the ideological mandates of the authorities (E. Yang and Roberts 2021, 1–2). Indeed, certain terms like "social control" or "surveillance" are more positively connoted, and "democracy" or "equality" more negatively connoted, in Baidu Baike than in Wikipedia (E. Yang and Roberts 2021, 5–6).

The Domestic and Foreign Political Role of the State

While the EU has established broad guidelines and a legal framework for companies using AI within its Union's AI Act (Sheehan 2023, 16), there is a closer yet opaque collaboration between the CCP and Chinese tech companies. In the West, companies independently collect user data for commercial purposes, whereas the CCP intervenes in market operations, not necessarily out of economic interest, but rather with

a political motivation to "engineer" a new, efficient society using user data to ensure security and stability (cf. Lin 2024, 1133).

The perceived ideological and geopolitical expansion of China is often associated with the increasing economic power of the Chinese economy: Given concerns about the emergence of a Chinese alliance with South Asia, Africa, Latin America, or Eastern Europe, the export of ICT infrastructure and surveillance systems to countries in the Global South is seen as a problematic form of digital colonialism (cf. Lin 2024, 1127 ff.). Whether China is engaging in a new form of colonialism or misusing the rhetoric of cooperation to conceal self-serving, strategic motives is debated (Cheng 2018; Fitrah 2022; Nathan and Zhang 2022; Talebi 2021) and requires further research. Additionally, Lin suggests analyzing China's intervention in Africa through the concepts of surveillance capitalism and data colonialism (Lin 2024, 1133–36).

Conclusion

The CCP is creating a pool of knowledge, where new sources can occasionally flow in and out, only to be dissolved like chlorine does in a pool. The Great Firewall functions as an ideological filter—serving as an exclusion system that separates desirable information from undesirable content. It will be fascinating to observe how, in the coming years, two extremely different yet internally coherent realities emerge from the societal outputs processed by AI systems and how they will interact with one another.

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