

Design Concept: Scaffolding Geopolitical Reflection Among Tech Workers

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Abstract

This paper presents a speculative Human-Computer Interaction design proposal for encouraging geopolitical reflexivity amongst tech workers at geopolitically relevant technology companies. Recent scholarship in International Relations and Science and Technology Studies increasingly recognizes technology firms and their workers as geopolitical actors whose decisions shape international dynamics. However, existing Responsible Innovation and Responsible AI approaches rarely engage with the geopolitical narratives and imaginaries that underpin contemporary AI development.

Building upon RI scholarship on reflexivity, reflective HCI, and creative HCI work on computational narratives, this paper proposes an AI-enabled interactive narrative system in which users engage with a speculative “choose your own adventure” style scenario centred on technology, power, and geopolitics. Through narrative interaction, archetype assignment, and socially scaffolded workshop reflection, the system aims to encourage target users to critically examine their assumptions, values, and positionality within broader sociotechnical systems. We argue that speculative narrative systems may offer a productive avenue for introducing geopolitical reflexivity into responsible technology initiatives without relying on prescriptive or moralising approaches.

Keywords

HCI, Reflection, Geopolitics, Tech Workers, Design, Responsible, Responsibility, Ethics, Positionality, Transformative Practice

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1 Introduction

Recent scholarship in International Relations examines how powerful firms and their workers in the AI stack are developing geopolitical agency.[6, 8, 12, 19, 34, 35, 38, 40, 46, 52, 53] While this scholarship often has its roots in the literature of international political economy[16, 56], it is also inspired by recent and current events at

the intersection of technology, power, and geopolitics. For instance, Elon Musk’s remote satellite company Starlink has, at different points during Russia’s most recent invasion of Ukraine, unilaterally granted and denied connectivity access to Ukrainian and Russian forces during active conflict.[42] Venture capital-funded technology startups raise capital based on promises to establish sovereign jurisdictions in the likes of Greenland and Honduras.[5, 37] OpenAI’s Stargate project promises to launch “OpenAI for Countries” whereby states can build their private and public AI infrastructure atop the OpenAI stack.[36]

One common thread running through each of these examples is the shared narrative of technological development and use without accountability or oversight. Terms such as *democratic AI*, *strategic competition*, and *technological race* are invoked by technology companies and leaders to justify technological advancement[17], often at the expense of ethical, safe, or secure AI development and/or robust AI governance, particularly in the United States.[11, 13, 26, 44, 59, 60, 62, 63] The first International AI Safety Report acknowledges the “strong competitive pressure[s] which may lead [governments and AI companies] to de-prioritize risk management.”[3] In this context, firms accountable primarily to private interests, rather than democratic publics, are increasingly shaping dynamics within the international system.

Tech workers within these companies have previously demonstrated awareness of their role in geopolitics, often through how the technologies developed and provided by their workplaces are used in global conflict.[61, 65] More recent examples of tech worker resistance to geopolitical events within tech companies have also been documented, particularly in media reporting.[14, 29, 41, 58] Science and Technology Studies (STS) has long held that technologies take on the values of the people who create them.[27] If this premise is accepted, then tech workers, especially at those companies that are developing geopolitically relevant technologies, become a necessary intervention site to encourage the responsible actions that reduce harmful global impacts.[49]

Narratives are a significant part of how firms engage with the current geopolitical system.[12, 27] From an STS perspective, firm narratives and the ideologies that underpin them¹ contribute to the design logics of the systems and technologies, and are acted upon from both within and without firms. Firms therefore create, and in turn, are created by, popular narratives such as *strategic competition*, *technological race*, *democratic AI*, and various uses of the term *sovereignty*. Interrogating the narratives may be a crucial first step in encouraging tech workers to think through the how, why, and global impacts of the technologies that they work on; which can contribute to more ethical AI from the ground up.

¹this concept is explored more completely by Sheila Jasanoff and Sang Hyun-Kim as “sociotechnical imaginaries” in their work *Dreamscapes of Modernity*

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This design proposal seeks to explore the tensions between responsible AI development, geopolitics, tech workers, and the narratives that fuel AI development today, building upon existing work in Human-Computer Interaction (HCI) and creative HCI. I present a tool targeted towards tech workers that interrogates geopolitically relevant narratives and the history and sociology of technology to encourage reflexivity related to their positionality and potential agency in the current geopolitical moment. This goal is aligned with the broader goals of RAI, which advocates for better development and design choices from the ground up[20, 21, 45, 55]. At the moment, geopolitical reflexivity is missing from RAI. Existing work on reflection tools in creative HCI can offer productive ways to engage tech workers who are often ideologically motivated and have little time for reflection in the workplace.

2 Background and Motivation

2.1 Inspiration

AI companies across the stack are gaining geopolitical influence and agency.[6, 8, 16, 19, 34, 35, 38, 40, 52, 53] With the introduction of AI as a general purpose technology [10], the subsequent consolidation of power that AI has brought frontier labs [24], and the geopolitically relevant narratives that drive AI development today,[12] the people that build, sell, market, and make decisions about AI ought to be aware of the global impacts of their work.[41] Considering the geopolitical relevance of AI companies, tech workers within these companies should become key sites of intervention for RAI efforts. While the relative agency of these workers may be variable, they are positioned to make decisions - whether of technical, strategic, or business in nature - that have ramifications for how states interact with one another in the international system.[16, 30, 58, 63] However, the intersection of geopolitics and technology is rarely addressed in Responsible Innovation (RI) or Responsible AI (RAI) initiatives²[39].

In their foundational paper Stilgoe et al. introduce four "pillars" of RI.[54] These are anticipation, reflexivity, inclusion, and responsiveness. This design proposal focuses especially on the *reflexivity*³ pillar of RI. Grimpe et al. later expanded and applied Stilgoe et al.'s four pillars to HCI.[23] Here, Grimpe et al. connect reflexivity to Schön's notion of "reflection-in-action"[47] and argue that "Technology is not conceptualized as a product to be designed, delivered and then to be 'ticked off', but as an "open space" that different users and other stakeholders continually engage with, and that they may challenge at times." [23] Therefore, reflexivity offers a promising entry point for engaging tech workers whose views may be shaped by dominant narratives about AI and geopolitics[12]. While reflexivity alone cannot guarantee more responsible technological outcomes[54], if appropriately scaffolded[50], it may serve as a necessary precursor to broader responsible engagement.

²While RI and RAI are distinct but related traditions, both broadly seek to encourage more socially responsive technological development

³Defined by Stilgoe et al. as "building actors' and institutions' reflexivity means re-thinking prevailing conceptions about the moral division of labour within science and innovation[57]. Reflexivity directly challenges assumptions of scientific amorality and agnosticism. Reflexivity asks scientists, in public, to blur the boundary between their role responsibilities and wider, moral responsibilities. It therefore demands openness and leadership within cultures of science and innovation."

There is already a body of work in the RI and HCI literature that engages tech workers on reflection and responsibility through toolkits and systems. This body of work includes the use of cards[15], reflective systems[9], and games[25]. Further work in HCI and creative HCI on computational narratives[32, 33] and the use of AI for reflection tools is also particularly salient.[2, 4] Combined, these approaches provide a roadmap for developing a bespoke intervention that encourages tech workers to engage more meaningfully with the geopolitical impacts of their technologies.

3 Design Concept

3.1 Overview

The proposed tool is an AI system whereby the user engages in a 'choose your own adventure' type storyline. The tool is intended for tech workers at geopolitically relevant companies, to be used at the workplace, ideally during workshops or other appropriately socially scaffolded sessions.[50, 51]

3.2 Assumptions

The design rationale for this proposal makes several assumptions about the target population of technology workers in geopolitically relevant companies. These include that the target population is willing and able to engage in reflection, though they may have limited time and resources for reflection, and that they may have established beliefs about technology and geopolitics based on dominant narratives at this current moment. They, however, may have different levels of agency and autonomy within their organisations to enact change and make more responsible decisions in the workplace. They may also be mission oriented and motivated not just by financial remuneration, but also by a desire to enact positive change through their technologies.

Research in psychology suggests that some people are better than others in engaging in reflection.[7] Moreover, reflection in HCI tools must be appropriately scaffolded, preferably within social situations, it cannot be assumed to just happen in a vacuum.[51] This design proposal also assumes that reflection will lead to better, safer, fairer, or more responsible technology development, proliferation, and design outcomes.[18, 23, 45, 54] However, this type of reflection has not yet been robustly applied to the current geopolitical environment.[39]

3.3 Tensions

The tool must be engaging for the busy tech worker, such as those working in start-ups, who may have little time and resources to engage in more fundamental level reflection[35, 43]. It should not aim to assign correctness to views[31]. The user must experience high amounts of agency in their engagement with the tool, so that they feel that the reflection is their own and not imposed on them.

3.4 Experience

The system would function as a chat style interface that is hosted on an external website, resembling the landing page of existing Large Language Models (LLMs), with space for an added storyline above the chatbot. The colour palette would be soft and neutral to evoke a sense of calm in the user.

The user begins at an introductory screen with an introductory scenario. After receiving background information on the scenario and being instructed to reply to the prompts as closely as possible to their own beliefs, values, and personality, the user is immediately confronted with a choice that requires reflexive engagement with their core values. The scenario is geopolitically relevant but does not invoke real countries or technologies. The system reacts to what the user has inputted with an update to the scenario, and the user responds in turn. Every decision that the user makes results in a different outcome. After sequencing through several of these iterations, the user is assigned an "archetype" that comes with a description and a saveable avatar.[28] The system relies on the use of AI in the backend, and bespoke digital art on the frontend. Approximately ten archetypes would be developed, which will be inspired by historical technologists and leaders.

3.5 Moments and Mechanisms of Reflection

The key moments of reflection will occur during interaction with the system itself, and afterwards during a guided reflection exercise, preferably in the form of a workshop. The archetype assignment functions as a conversational prompt to encourage further socially-mediated reflection amongst coworkers. Each archetype description will contain unique strengths and weaknesses to guide discussion.

The reflection that occurs during use of the tool is both in-the-moment ("reflection-in-action")[47] and retrospective. Reflection may begin during interaction with prompts as the user responds to each of the prompts and sees how the storyline evolves based on their responses to the prompts, but deeper reflection would occur during group discussions and/or workshops centred on the use of the tool.[1, 2] Workshop discussion should be kept to 1 hour maximum, and should include a short presentation on which archetype each participant was assigned, an oral reflection on how they think they got there, whether they agree or disagree with the assignment of the archetype, and whether they wish that they would have been assigned a different archetype.

This tool would support critical and ethical reflection.[48] By exploring themes such as the role of narratives, the interaction between technology and geopolitics, and the inherent complexity of human interaction with their tools across time and space through story, role-play, ambiguity, and collective discussion, the system aims to encourage users to critically examine their own assumptions, values, and positionality within broader sociotechnical systems. By keeping this tool user-led, anchored in the workplace, and by avoiding the use of buzz words or reference to current events while staying anchored in real-world data, rumination is ideally minimised.

3.6 Discussion

3.6.1 Opportunities. This design concept proposes a novel idea to a genuine problem with real world, downstream implications for safe, responsible, and ethical technology development. It engages a user population that is not often engaged, and in many ways, has yet to be appropriately categorized in the literature. The tool attempts to leverage HCI and creative HCI research on AI-mediated reflection, while addressing some of the critiques of responsible

innovation toolkits, such as ineffectiveness and failure to engage with critical, root issues.[21, 64]

3.6.2 Risks. There are several anticipated risks to the use of this tool. These include unintended rumination after the assignment of an archetype, the potential for social judgement within the workplace during the workshop element, bias in the data used (the historical and geopolitical data that would underpin the RAG-tuning tends to be written by the victor, after all), and the potential for users to perceive the tool as pushing a particular narrative or political ideology.

In order to try to mitigate these risks, care should be taken to ensure that the archetypes that are assigned are not inherently hostile or could be interpreted to mean that their assignment can be attributed to personal failing. Each archetype will be assigned strengths and weaknesses, and there will be no assigned hierarchy to archetypes. Efforts will also be made to ensure explainability, where the system explains how and why it adapted the story, and what "decisions" were made in archetype assignment.

3.6.3 Open Questions. As the design prototype is developed, there are several open questions for further discussion, such as:

- **Conceptual**

- (1) How can reflective systems encourage geopolitical reflexivity without becoming prescriptive or moralising?

- **Design**

- (1) What forms of narrative ambiguity best support reflection while preserving user agency and interest?
- (2) Can playfulness or aesthetic softness reduce defensiveness in ethically charged reflective systems?

- **Methodological**

- (1) How might researchers evaluate whether meaningful geopolitical reflection has occurred?

4 Future Work and Conclusion

The design of the tool will be informed by ethnographic inquiry, semi-structured interviews, and design workshops with the target population. In line with participatory design approaches, this will allow for a deeper understanding of the needs and beliefs of the target population.[22]

This design proposal has outlined the design logic of an RI-inspired tool for tech workers at geopolitically relevant companies. Given that tech workers at these companies have increasing levels of geopolitical influence, RI and RAI efforts should attempt to reach this newly relevant population. HCI and creative HCI may offer a unique way to do this, while at the same time addressing some of the critiques of the responsible innovation movement. This design concept proposes the development of an AI-enabled, RAG fine-tuned tool for the target population that encourages reflection on narratives that currently underpin technology and geopolitics and may discourage more responsible, safe, or ethical AI and technology development. By engaging narratives rather than politics, policies, or current events, it is anticipated that the tool will allow for unthreatening reflection amongst a target population that may already have relatively crystallized beliefs.

References

- [1] Eric P.S. Baumer. 2015. Reflective Informatics: Conceptual Dimensions for Designing Technologies of Reflection. In *Proceedings of the 33rd Annual ACM Conference on Human Factors in Computing Systems (CHI '15)*. Association for Computing Machinery, New York, NY, USA, 585–594. doi:10.1145/2702123.2702234
- [2] Eric P.S. Baumer, Vera Khovanskaya, Mark Matthews, Lindsay Reynolds, Victoria Schwanda Sosik, and Geri Gay. 2014. Reviewing reflection: on the use of reflection in interactive system design. In *Proceedings of the 2014 conference on Designing interactive systems (DIS '14)*. Association for Computing Machinery, New York, NY, USA, 93–102. doi:10.1145/2598510.2598598
- [3] Y Bengio. [n. d.]. International AI safety report. ([n. d.]).
- [4] Marit Bentvelzen, Paweł W. Woźniak, Pia SF Herbes, Evropi Stefanidi, and Jasmin Niess. 2022. Revisiting Reflection in HCI: Four Design Resources for Technologies that Support Reflection. *Proceedings of ACM on interactive, mobile, wearable and ubiquitous technologies* 6, 1 (2022), 1–27. doi:10.1145/3517233 Place: New York, NY, USA.
- [5] Joseph Bernstein. 2023. Who Would Give This Guy Millions to Build His Own Utopia? *The New York Times* (Dec. 2023). <https://www.nytimes.com/2023/12/12/style/praxis-city-dryden-brown.html>
- [6] Clotilde Bomont and Tim Ruhligh. 2025. Challenging US dominance: China's DeepSeek model and the pluralisation of AI development | European Union Institute for Security Studies. <https://www.iss.europa.eu/publications/briefs/challenging-us-dominance-chinas-deepseek-model-and-pluralisation-ai-development>
- [7] Anna Chaddock, Richard Thwaites, James Bennett-Levy, and Mark Freeston. 2014. Understanding individual differences in response to Self-Practice and Self-Reflection (SP/SR) during CBT training. *The Cognitive Behaviour Therapist* 7 (July 2014). doi:10.1017/S1754470X14000142
- [8] Simon Chesterman. 2025. Silicon Sovereigns: Artificial Intelligence, International Law, and the Tech-Industrial Complex. doi:10.48550/arXiv.2505.05506 arXiv:2505.05506 [cs].
- [9] Sara Colombo, Qiulin Zhu, and Kacper Pietrzykowski. 2026. Tech Footprint Toolkit: Supporting Designers in Anticipating Technology Impact. In *Proceedings of the Extended Abstracts of the 2026 CHI Conference on Human Factors in Computing Systems (CHI EA '26)*. Association for Computing Machinery, New York, NY, USA, 1–10. doi:10.1145/3772363.3798662
- [10] Nicholas Crafts. 2021. Artificial intelligence as a general-purpose technology: an historical perspective. *Oxford Review of Economic Policy* 37, 3 (Sept. 2021), 521–536. doi:10.1093/oxrep/grab012
- [11] Raluca Csernatonii. 2025. The EU's AI Power Play: Between Deregulation and Innovation. <https://carnegiendowment.org/research/2025/05/the-eus-ai-power-play-between-deregulation-and-innovation?lang=en>
- [12] Raluca Csernatonii, Dennis Broeders, Lise H. Andersen, Marijn Hooijink, Ingvild Bode, Jon R. Lindsay, and Elke Schwarz. 2025. Myth, Power, and Agency: Rethinking Artificial Intelligence, Geopolitics and War. *Minds and machines (Dordrecht)* 35, 3 (2025). doi:10.1007/s11023-025-09741-0 Place: Dordrecht.
- [13] Ryan DePirri. 2025. A Tale of Two AI Policies: The Shifting Legal Landscape of U.S. AI Regulation. <https://aubl.org/2025/04/a-tale-of-two-ai-policies-the-shifting-legal-landscape-of-u-s-ai-regulation/>
- [14] Di Di and Bryce Nishikawa. 2025. Navigating ethical boundaries: Subtle agency and compliance among tech workers in China and the United States. *Big Data & Society* 12, 2 (June 2025), 20539517251340626. doi:10.1177/20539517251340626
- [15] Salma Elsayed-Ali, Sara E Berger, Vagner Figueredo De Santana, and Juana Catalina Becerra Sandoval. 2023. Responsible & Inclusive Cards: An Online Card Tool to Promote Critical Reflection in Technology Industry Work Practices. In *Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems*. ACM, Hamburg Germany, 1–14. doi:10.1145/3544548.3580771
- [16] Henry Farrell and Abraham L. Newman. 2019. Weaponized Interdependence: How Global Economic Networks Shape State Coercion. *International Security* 44, 1 (July 2019), 42–79. doi:10.1162/isec_a_00351
- [17] Sophie-Charlotte Fischer, Andrea Gilli, and Mauro Gilli. 2021. Technological Change and Grand Strategy. In *The Oxford Handbook of Grand Strategy*, Thierry Balzacq and Ronald R. Krebs (Eds.). Oxford University Press, 0. doi:10.1093/oxfordhb/9780198840299.013.14
- [18] Erik Fisher, Roop L. Mahajan, and Carl Mitcham. 2006. Midstream Modulation of Technology: Governance From Within. *Bulletin of Science, Technology & Society* 26, 6 (Dec. 2006), 485–496. doi:10.1177/0270467606295402
- [19] Indermit Gill. 2020. Whoever leads in artificial intelligence in 2030 will rule the world until 2100. <https://www.brookings.edu/articles/whoever-leads-in-artificial-intelligence-in-2030-will-rule-the-world-until-2100/>
- [20] Nicolas E. Gold. 2021. Virginia Dignum: Responsible Artificial Intelligence: How to Develop and Use AI in a Responsible Way. *Genetic programming and evolvable machines* 22, 1 (2021), 137–139. doi:10.1007/s10710-020-09394-1
- [21] Julian “Inaki” Goñi, Eugenia Rodrigues, Maria Jesus Parga, Martín Illanes, and María José Millán. 2024. Tooling with ethics in technology: a scoping review of responsible research and innovation tools. *Journal of Responsible Innovation* 11, 1 (Dec. 2024), 2360228. doi:10.1080/23299460.2024.2360228 _eprint: <https://doi.org/10.1080/23299460.2024.2360228>
- [22] Judith Gregory. [n. d.]. Scandinavian Approaches to Participatory Design. ([n. d.]).
- [23] Barbara Grimpe, Mark Hartwood, and Marina Jirotko. 2014. Towards a closer dialogue between policy and practice: responsible design in HCI. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*. ACM, Toronto Ontario Canada, 2965–2974. doi:10.1145/2556288.2557364
- [24] Karen Hao. 2025. *Empire of AI: inside the reckless race for total domination*. Allen Lane an imprint of Penguin Books, London.
- [25] D. Fox Harrell, Pablo Ortiz, Peter Downs, Maya Wagoner, Elizabeth Carré, and Annie Wang. 2018. Chimeria:Grayscale: an interactive narrative for provoking critical reflection on gender discrimination. *Coimbra University Press* (2018). <https://dspace.mit.edu/handle/1721.1/135084.2> Accepted: 2021-11-24T18:59:49Z.
- [26] The White House. 2025. Initial Rescissions Of Harmful Executive Orders And Actions. <https://www.whitehouse.gov/presidential-actions/2025/01/initial-rescissions-of-harmful-executive-orders-and-actions/>
- [27] Sheila Jasanoff and Sang-Hyun Kim. 2015. *Dreamscapes of Modernity: Sociotechnical Imaginaries and the Fabrication of Power*. University of Chicago Press, Chicago. doi:10.7208/9780226276663
- [28] C. G. (Carl Gustav) Jung. 1980. *The archetypes and the collective unconscious*. Number 9 in The collected works of C.G. Jung. Routledge, London.
- [29] Makena Kelly. 2026. Palantir Employees Are Starting to Wonder if They're the Bad Guys. *Wired* (April 2026). <https://www.wired.com/story/palantir-employees-are-starting-to-wonder-if-theyre-the-bad-guys/> Section: tags.
- [30] Arif Ali Khan, Muhammad Azeem Akbar, Mahdi Fahmideh, Peng Liang, Muhammad Waseem, Aakash Ahmad, Mahmood Niazi, and Pekka Abrahamsson. 2022. AI Ethics: An Empirical Study on the Views of Practitioners and Lawmakers. doi:10.48550/arXiv.2207.01493 arXiv:2207.01493 [cs].
- [31] Philipp Koralus. 2025. The Philosophic Turn for AI Agents: Replacing centralized digital rhetoric with decentralized truth-seeking. doi:10.48550/arXiv.2504.18601 arXiv:2504.18601 [cs.CY].
- [32] Max Kreminski, Melanie Dickinson, Michael Mateas, and Noah Wardrip-Fruin. 2020. Why Are We Like This?: The AI Architecture of a Co-Creative Storytelling Game. In *Proceedings of the 15th International Conference on the Foundations of Digital Games (FDG '20)*. Association for Computing Machinery, New York, NY, USA, 1–4. doi:10.1145/3402942.3402953
- [33] Max Kreminski, Ben Samuel, Edward Melcer, and Noah Wardrip-Fruin. 2019. Evaluating AI-Based Games through Retellings. *Proceedings of the AAAI Conference on Artificial Intelligence and Interactive Digital Entertainment* 15, 1 (Oct. 2019), 45–51. doi:10.1609/aiide.v15i1.5223
- [34] Vili Lehdonvirta, Bóxi Wú, and Zoe Hawkins. 2024. Compute North vs. Compute South: The Uneven Possibilities of Compute-based AI Governance Around the Globe. *Proceedings of the AAAI/ACM Conference on AI, Ethics, and Society* 7, 1 (Oct. 2024), 828–838. doi:10.1609/aies.v7i1.31683
- [35] Anna Nadabaidze. 2025. Startups Envisioning Algorithmic Warfare: The Discourses of US Tech Companies in Defense AI. *Global policy* 16, 3 (2025), 487–493. doi:10.1111/1758-5899.70047 Place: London.
- [36] OpenAI. [n. d.]. Introducing OpenAI for Countries. <https://openai.com/global-affairs/openai-for-countries/>
- [37] Gustavo Palencia. 2022. Honduran special economic zone adopts bitcoin as legal tender. *Reuters* (April 2022). <https://www.reuters.com/world/americas/honduran-special-economic-zone-adopts-bitcoin-legal-tender-2022-04-07/>
- [38] Barry Pavel, Ivana Ke, Michael Spirtas, James Ryseff, Lea Sabbag, Gregory Smith, Keller Scholl, and Dominique Lumpkin. 2023. *AI and Geopolitics: How Might AI Affect the Rise and Fall of Nations?* Technical Report. <https://www.rand.org/pubs/perspectives/PEA3034-1.html>
- [39] Luca Possati. 2024. Exploring the Geopolitical Limits of Responsible Innovation and Technology Assessment. *Science and technology studies* (March 2024). doi:10.23987/sts.137812
- [40] Sylvester Quansah. 2025. DeepSeek R1: Implications of a New AI Era for Africa. <https://carnegiendowment.org/posts/2025/03/deepseek-ai-implications-africa?lang=en>
- [41] Sydney Reis. 2025. AI Workers, Geopolitics, and Algorithmic Collective Action. doi:10.48550/arXiv.2511.17331 arXiv:2511.17331 [cs.CY].
- [42] Joey Roulette, Cassell Bryan-Low, Tom Balmforth, Joey Roulette, and Cassell Bryan-Low. 2025. Musk ordered shutdown of Starlink satellite service as Ukraine retook territory from Russia. *Reuters* (July 2025). <https://www.reuters.com/investigations/musk-ordered-shutdown-starlink-satellite-service-ukraine-retook-territory-russia-2025-07-25/>
- [43] Mark Ryan, Eugen Octav Popa, Vincent Blok, Andrea Declich, Maresa Berliri, Alfonso Alfonsi, and Simeon Veloudis. 2023. A model of social responsibility for start-ups: developing a cross-fertilisation of responsible innovation, the lean start-up approach, and the quadruple helix approach. *Journal of Responsible Innovation* 10, 1 (Jan. 2023), 2264615. doi:10.1080/23299460.2023.2264615 _eprint: <https://doi.org/10.1080/23299460.2023.2264615>
- [44] Stefka Schmid, Daniel Lambach, Carlo Diehl, and Christian Reuter. 2025. Arms Race or Innovation Race? Geopolitical AI Development. *Geopolitics* 30, 4 (Aug. 2025), 1907–1936. doi:10.1080/14650045.2025.2456019 _eprint:

- <https://doi.org/10.1080/14650045.2025.2456019>.
- [45] Daan Schuurbiers. 2011. What happens in the Lab: Applying Midstream Modulation to Enhance Critical Reflection in the Laboratory. *Science and Engineering Ethics* 17, 4 (2011), 769–788. doi:10.1007/s11948-011-9317-8
- [46] Amrith Ramkumar and Brian Schwartz. 2025. Exclusive | Silicon Valley Launches Pro-AI PACs to Defend Industry in Midterm Elections. <https://www.wsj.com/politics/silicon-valley-launches-pro-ai-pacs-to-defend-industry-in-midterm-elections-287905b3> Section: Tech.
- [47] Donald A. Schön. 2016. *The reflective practitioner: how professionals think in action*. Routledge, Abingdon, England. doi:10.4324/9781315237473
- [48] Phoebe Sengers, Kirsten Boehner, Shay David, and Joseph 'Jofish' Kaye. 2005. Reflective design. ACM, New York, NY, USA, 49–58. doi:10.1145/1094562.1094569 Book Title: Critical computing-between sense and sensibility : proceedings of the fourth Decennial Aarhus Conference : August 20-24, 2005, Aarhus, Denmark.
- [49] Chinmayi Sharma. 2024. AI's Hippocratic Oath. <https://papers.ssrn.com/abstract=4759742>
- [50] Petr Slovak. 2025. Tools for (Changing) Thought: Scaffolding Cognitive Skills Development within Mental Health Contexts. In *Tools for Thought Workshop*. Yokohama, Japan.
- [51] Petr Slovák, Christopher Frauenberger, and Geraldine Fitzpatrick. 2017. Reflective Practicum: A Framework of Sensitising Concepts to Design for Transformative Reflection. In *Proceedings of the 2017 CHI Conference on Human Factors in Computing Systems (CHI '17)*. Association for Computing Machinery, New York, NY, USA, 2696–2707. doi:10.1145/3025453.3025516
- [52] Swati Srivastava. 2023. Algorithmic Governance and the International Politics of Big Tech. *Perspectives on Politics* 21, 3 (Sept. 2023), 989–1000. doi:10.1017/S1537592721003145
- [53] Swati Srivastava and Justin Bullock. 2024. AI, Global Governance, and Digital Sovereignty. doi:10.48550/arXiv.2410.17481 arXiv:2410.17481 [cs].
- [54] Jack Stilgoe, Richard Owen, and Phil Macnaghten. 2013. Developing a framework for responsible innovation. *Research policy* 42, 9 (2013), 1568–1580. doi:10.1016/j.respol.2013.05.008 Place: Amsterdam.
- [55] Julia Stoyanovich, Rodrigo Kreis de Paula, Armanda Lewis, and Chloe Zheng. 2024. Using Case Studies to Teach Responsible AI to Industry Practitioners. doi:10.48550/arXiv.2407.14686 arXiv:2407.14686 [cs].
- [56] Susan Strange. 1996. *The Retreat of the State: The Diffusion of Power in the World Economy*. Cambridge University Press, Cambridge. doi:10.1017/CBO9780511559143
- [57] Tsjalling Swierstra, Dirk Stermerding, and Marianne Boenink. 2009. Exploring Techno-Moral Change: The Case of the ObesityPill. In *Evaluating New Technologies: Methodological Problems for the Ethical Assessment of Technology Developments.*, Paul Sollie and Marcus Düwell (Eds.). Springer Netherlands, Dordrecht, 119–138. doi:10.1007/978-90-481-2229-5_9
- [58] J. S. Tan, Natalia Luka, and Emily Mazo. 2024. Unlikely Organizers: The Rise of Labor Activism Among Professionals in the U.S. Technology Industry. doi:10.48550/arXiv.2307.15790 arXiv:2307.15790 [cs].
- [59] Executive Office The White House. 2025. Winning the Race America's AI Action Plan. <https://www.whitehouse.gov/wp-content/uploads/2025/07/Americas-AI-Action-Plan.pdf>
- [60] Vance. 2025. Remarks by the Vice President at the Artificial Intelligence Action Summit in Paris, France | The American Presidency Project. <https://www.presidency.ucsb.edu/documents/remarks-the-vice-president-the-artificial-intelligence-action-summit-paris-france>
- [61] Daisuke Wakabayashi and Scott Shane. 2018. Google Will Not Renew Pentagon Contract That Upset Employees. *The New York Times* (June 2018). <https://www.nytimes.com/2018/06/01/technology/google-pentagon-project-maven.html>
- [62] Yoshija Walter. 2024. Managing the race to the moon: Global policy and governance in Artificial Intelligence regulation—A contemporary overview and an analysis of socioeconomic consequences. *Discover Artificial Intelligence* 4, 1 (Feb. 2024), 14. doi:10.1007/s44163-024-00109-4
- [63] Kevin Wei, Carson Ezell, Nick Gabrieli, and Chinmay Deshpande. 2024. How Do AI Companies "Fine-Tune" Policy? Examining Regulatory Capture in AI Governance. doi:10.48550/arXiv.2410.13042 arXiv:2410.13042 [cs].
- [64] Richmond Y. Wong, Michael A. Madaio, and Nick Merrill. 2023. Seeing Like a Toolkit: How Toolkits Envision the Work of AI Ethics. *Proceedings of the ACM on Human-Computer Interaction* 7, CSCW1 (April 2023), 1–27. doi:10.1145/3579621 arXiv:2202.08792 [cs].
- [65] Anonymous Google and Amazon workers. 2021. We are Google and Amazon workers. We condemn Project Nimbus | Anonymous Google and Amazon workers. *The Guardian* (Oct. 2021). <https://web.archive.org/web/20240720085700/https://www.theguardian.com/commentisfree/2021/oct/12/google-amazon-workers-condemn-project-nimbus-israeli-military-contract>

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