Chapter 5
Extending AI Governance Frameworks:
A Comparative Analysis of Cybersecurity Policies in the EU, UK, USA, and China

Huzaifa Amar
http://orcid.org/0009-0006-5983-3287
Illinois Institute of Technology, USA

Tarun Sara
Illinois Institute of Technology, USA

ABSTRACT

As artificial intelligence (AI) systems and digital infrastructure continue to expand across all sectors, both AI governance and cybersecurity policy have become central challenges for modern governments. This paper extends the analytical framework of our baseline study, Between Innovation and Oversight, which examined AI governance in the EU, UK, US, and China, and applies it to the domain of cybersecurity governance. Using the same comparative dimensions, this paper evaluates how each region approaches cybersecurity and assesses whether the regulatory patterns identified in AI governance carry over. Although cybersecurity introduces additional pressures, particularly in relation to critical infrastructure and national security, the underlying governance philosophies remain largely consistent across regions. The findings suggest that AI governance and cybersecurity governance are best understood as part of a broader digital governance domain, in which long-standing political and regulatory cultures shape how nations balance innovation, security, and societal risk.

DOI: 10.4018/979-8-3373-8252-4.ch005

I INTRODUCTION

With the world increasingly becoming digital and interconnected, both artificial intelligence (AI) and cybersecurity are becoming more important. With that, they have become difficult policy challenges for governments. The growth of digital infrastructure has expanded opportunities for many sectors, while at the same time increasing both technological risks and broad societal impacts. As it is important for infrastructure, companies, governments, and individuals in general that they remain safe against the increasingly hostile digital landscape with growing cyber threats, traditional approaches to cybersecurity and AI policy must be reevaluated (Achuthan et al., 2024; Pum, 2022; McIntosh et al., 2024; Ahmed, 2024; Riek, 2023).

Our baseline paper, *Between Innovation and Oversight: A Cross-Regional Study of AI Risk Management Frameworks in the EU, US, UK, and China* (Al-Maamari, 2025), provided a comparative framework to analyze approaches to AI governance. The study evaluated each region (the European Union, the United States, the United Kingdom, and China) across five comparative frameworks of risk management: governance, adaptability and innovation, transparency and accountability, and stakeholder engagement (government, private sector, civil service, etc.). This research paper extends the analytical framework of the baseline paper from AI governance to cybersecurity policy, using the same evaluation frameworks to examine how the EU, the UK, the US, and China handle cybersecurity. However, we have condensed some sections down as we feel some sections of this analytical framework had enough overlap that it made sense to group them together.

This research paper aims to identify whether the patterns observed in AI governance also emerge in cybersecurity. The aim is to determine how each region balances innovation with regulation, national security with economic competitiveness, and centralized control with stakeholder collaboration. They will be evaluated via a similar evaluation framework used in the baseline paper (Al-Maamari, 2025; Amar, 2025). At the end, we aim to see the overlap between the AI policies of these nations, as discussed in the baseline paper, with their attempts at cybersecurity policy. The idea is not to replace the findings of the baseline paper, but to expand the scope of the baseline paper to the cybersecurity domain. We find that due to the expansion of technology and the continues integration of the internet into everyday life, AI and cybersecurity are part of the new "digital governance" field, which can have strong overlap or divergence with existing governmental structures (Hanisch et al., 2023).

In terms of the remainder of this paper: Section II reviews relevant literature and identifies the gap we aim to address. Section III describes the proposed methodology, workflow, and experimental design. Section IV goes into our findings of the four nations policies and approaches. Section V concludes the paper and outlines directions for future work.