Leveraging AI in Biodiversity Informatics: Ethics, privacy, and broader impacts

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Abstract

Artificial Intelligence (AI) has been heralded as a hero by some and rejected as a harbinger of destruction by others. While many in the community are excited about the functionality and promise AI brings to the field of biodiversity informatics, others have reservations regarding its widespread use. This talk will specifically address Large Language Models (LLMs) highlighting both the pros and cons of using LLMs. Like any tool, LLMs are neither good nor bad in and of themselves, but AI does need to be used within the appropriate scope of its ability and properly. Topics to be covered include model opacity (Franzoni 2023), privacy concerns (Wu et al. 2023), potential for algorithmic harm (Marjanovic et al. 2021) and model bias (Wang et al. 2020) in the context of generative AI along with how these topics differ from similar concerns when using traditional ML (Machine Learning) applications. Potential for implementation and training to ensure the most fair environment when leveraging AI and keeping FAIR (Findability, Accessibility, Interoperability, and Reproducibility) principles in mind, will also be discussed.

The topics covered will be mainly framed through the Biodiversity Information Standards (TDWG) community, focusing on sociotechnical aspects and implications of implementing LLMs and generative AI.

Finally, this talk will explore the potential applicability of TDWG standards pertaining to uniform prompting vocabulary when using generative AI and employing it as a tool for biodiversity informatics.

Keywords

HCI, human computer interaction, computer science, LLM, large language model, generative AI

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Conflicts of interest

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