

Artificial intelligence and Machine learning in digital health

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In recent years, there has been increasing interest in the use of medical web and mobile applications, particularly within the digital health (DHEAL) field. These applications cater to a diverse user base, ranging from novices to experts, and include end-users with and without disabilities. However, the unique software security needs of these varied users are often inadequately addressed. There exists a complex interplay between user experience, usability, accessibility, and security, and how the principle of psychological acceptability in security (the security mechanisms should not make the resource more difficult to access than if they were not present) is integrated during the development of DHEAL applications. Currently, there are no comprehensive approaches that simultaneously address usability (including user experience, usability, and accessibility) and security in the development of DHEAL applications. This often results in applications that are either user-friendly but insecure, or secure but difficult to use.

The advent of generative AI, and more specifically Large Language Models (LLMs), presents new opportunities to design, develop, and assess DHEAL applications that strike a balance between usability and security, while also ensuring psychological acceptability. This talk aims to introduce LLMs and discuss key principles for developing secure and usable DHEAL applications. Additionally, it will engage attendees in discussions on leveraging LLMs to develop, assess, and maintain such applications. As research in this area is still nascent, it offers a fertile ground for young, passionate researchers to contribute to advancing the state of the art and expanding our collective knowledge.