Education with AI & Machine Learning in a Post-Pandemic World

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Abstract

The shift from the 20th to the 21st century has brought about a multitude of technological developments, particularly in the education sector. However, the recent COVID-19 pandemic has created substantial obstacles for students, not limited to but including economic difficulties, the digital divide, and lack of resources. Nevertheless, the pandemic also allowed for the flourishing of artificial intelligence (AI) & machine learning technologies, which can be utilized to mitigate these issues in education. This paper explores how AI & machine learning have been used to innovate current education institutions — including programs such as Educational Data Mining, Intelligent Tutoring Systems, and Adult Learning Systems among others — as well as the drawbacks to this approach and potential future applications for these technologies. Naturally, as a developing field there are many objections surrounding these technologies due to concerns such as data privacy, loss of soft skills, barriers to implementation, and more. But in spite of this resistance, many AI-driven educational initiatives have thrived. By analyzing past successes and failures, we hope to provide guidance for better employing these technologies in education in the future.

Keywords: Artificial intelligence, machine learning, exploratory learning environments, educational data mining, intelligent tutoring systems, adult learning systems

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