The Role of Machine Learning and AI as Major Disruptors in the Education Sector

EXECUTIVE SUMMARY

The Education industry can utilize AI and Machine Learning to provide personalized offerings for students - from helping students select better courses and enabling self-learning, to automating performance assessment and much more. This paper focuses on 6 areas where AI and ML can make a difference for higher education.

01

Making Admission Process easier

Since natural language processing can identify a student's personality traits, interests, and preferences with high levels of accuracy, the system can do away with a lot of opaque processes and convoluted paperwork.

02

Enhancing the Learning Experience

AI and Machine learning can transform education into an immersive experience. Imagine students learning about the Titanic by exploring the wreck of the Titanic with their HoloLens annotating the key events as they unfolds in front of their eyes.

03

Customizing Education

AI-powered platforms can help students to regulate the pace, content, and mode of dissemination based on their preferences and capabilities.

04

AI and Online Tutoring

Propelled by Artificial Intelligence and Machine Learning not only makes finding remote help easier but taps into the power of crowdsourcing and collaboration.

05

Examining Student Performance

The application of AI tools infuses objectivity to the whole evaluation and examination process and makes the evaluation proactive.

06

Improving Administrative and Strategic Efficiency

Machine Learning helps institutions use analytics to identify a user profile and provide them with the required access to relevant systems, depending on their roles.

CONCLUSION

The best application of Artificial Intelligence in education are the tools that assist tutors and other educators focus more time on student interaction and core academic activities.

WHITEPAPER

01. MAKING ADMISSION PROCESS GETS EASIER

Artificial Intelligence and Machine Learning algorithms have sufficiently evolved to be applied for arduous college admission processes. Since natural language processing can identify a student's personality traits, interests, and preferences with high levels of accuracy, the system can do away with a lot of opaque processes and convoluted paperwork. Predictive algorithms help universities pick up specific behaviors which emerge during the admission cycle, to ensure the student is making the right choice.

MACHINE LEARNING IN ACTION
INSIGHTS FROM ESSAYS

GoSchoolWise.com is an intuitive student and college matching tool that uses IBM Watson to glean insights from huge swamps of unstructured data such as essays written by the student, and identifies the most appropriate college and course. The website considers various parameters such as financial aid calculator, environmental considerations, and more, when considering colleges that "fit" a student's personality and ability.

## 0.2 ENHANCING THE LEARNING EXPERIENCE

The human brain processes visuals 60,000 times faster than text, making videos and images a much more potent option compared to text. Several artificial reality tools such as Microsoft's HoloLens, Google Expedition, and Oculus Rift translate drab traditional lessons into meaningful and lively real-world experiences. AI and Machine learning can transform education into an immersive experience. Imagine students learning about the Titanic by exploring the wreck of the Titanic with their HoloLens annotating the key events as they unfolds in front of

their eyes. Likewise, consider students experience the innards of the human body through immersive technology, as opposed to trying to make sense out of it with an obsolete dummy model.

0.3 CUSTOMIZING EDUCATION

Artificial Intelligence now offers an effective solution to tailor the pace of learning based on different learning abilities. Several AI-powered platforms already propel pedagogy to new levels helping students to regulate the pace, content, and mode of dissemination based on their preferences and capabilities.
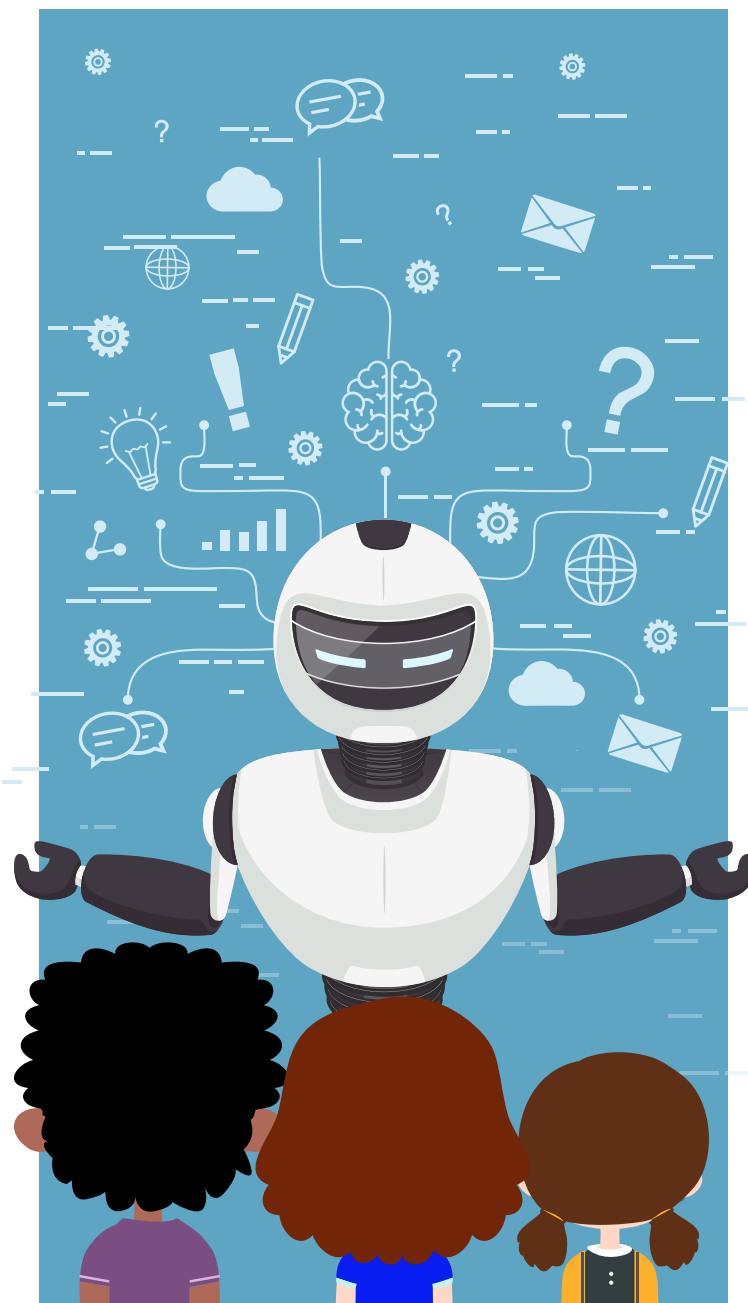
MACHINE LEARNING IN ACTION
TAILORED COURSE OFFERINGS

Third-Space Learning's AI helps detect the student's understanding of a concept and offers teachers real-time feedback to identify pain points on a proactive basis.

Carnegie Learning's Intelligent Tutoring System provides feedback about the individual student's performances and, strengths and weaknesses, bringing out the skill gaps and exact learning needs of each student, to chalk out the best course of action.

Content Technologies (CTI) leverages Deep Learning to create and assemble custom textbooks. Educators import syllabus and material into CTI's engine which analyzes the content and correlates it to the individual student's capabilities and orientation tailored to perfectly match each student's receptive skills.

Thinkster Math, a tutoring app, assigns each student a behind-the-scenes tutor and analyzes where they have gone wrong or the point at which they misunderstood an important problem-solving step. Video assistance and immediate personalized feedback make this a very powerful tool.

0.4 AI AND ONLINE TUTORING

With students taking the help of tutors located thousands of miles away, online tutoring is already well entrenched, thanks to the first wave of the Internet Revolution. The latest digital revolution, propelled by Artificial Intelligence and Machine Learning, not only makes finding such remote help easier, but taps into the power of crowdsourcing and collaboration.

0.5 EXAMINING STUDENT PERFORMANCE

A big untapped potential of machine learning and artificial intelligence in education is in examining and evaluating students' progress. Grading takes up a significant amount of teacher's time; time that is better spent preparing for class, interacting with students, or working on their professional development.

The application of AI tools infuses objectivity to the whole evaluation and examination process and makes the evaluation proactive. Machine learning can track student performance in real time, and even predict future performance based on the calculations on their on-going academic records. The standards of assessment and the pattern of marking become universal, with the same algorithm applicable to everyone.

MACHINE LEARNING IN ACTION

APPLYING ALGORITHMS

Brainly, a popular social network for students, applies AI algorithms to personalize the platform's networking features. For instance, a student user receives friend suggestions based on areas where students need help. Each student is supported to get access to information, helping them along their unique path of their learning curve.

0.6 IMPROVING ADMINISTRATIVE AND STRATEGIC EFFICIENCY

Machine Learning helps institutions use analytics to identify a user profile and provides them with the required access to relevant systems, depending on their roles. The algorithms are highly sensitive to suspicious activity, and ensures the system triggers additional authentication process to protect against cyber-breach.

Machine Learning studies student patterns and other trends, to list down associated risk levels. Institutions may develop predictive models of attrition drivers based on such insights to reduce churn and increase student retention rate.

CONCLUSION

The talk of robots replacing human teachers is far-fetched and unfounded. Artificial Intelligence powered tools automate low-priority yet time-consuming tasks, freeing up teacher's time. The best application of Artificial Intelligence in education are the tools that assist tutors and other educators to focus more time on student interaction and core academic activities, rather than on laborious and meaningless administrative tasks. The infusion of machine learning and artificial intelligence will also help spur creativity, engagement and stronger learning outcomes among students.

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