

Machine learning in Education and Application.

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ABSTRACT

This research paper is aimed about machine learning and artificial intelligent in education. this will give you all information about machine learning in education to and how it will make more efficient and flexible to understand the conceptual concept in this research paper we will also focused on student performance and grade. The application of machine learning in an education area is currently very interesting to researchers and scientists, and it is the main focus of our study. Virtual assistant play big role in education. It helps us to easily understand and deal with any problem and makes balance throughout the whole life in every aspect. Many of the changes have undergone due to the increasing number of technology advancements in the ways teachers educate and the ways of that student learn. One of

the landmark events in the course of evolution of technology has been the advent of artificial intelligence and machine learning.

In this we can also see student performance and increase the ability of student to achieve their goals. In recent years, in the field of education, there has been a clear progressive trend towards precision education. as a rapidly evolving AI technique, machine learning is viewed as an important means to realize it. the result shoes that the majority of studies focused on prediction of the learning performance. the key goal of education is to cultivate the talent of all students. it is commonly believed that each student's learning experience are unique. therefore , it is difficult for teacher to teach all students individual .

Keywords: machine learning, artificial intelligence education, virtual assistant education sector.



I. INTRODUCTION

The goal of machine learning is to program computers to use example data and past experience to solve the given problem with machine learning alots of thing are possible like self driving car, in education ,computer vision ,bioinformatics etc. This study focused

on application of machine learning in education. education is changing on daily basis, Nowadays it's not just about classroom and students there are so many digital resources which are used to make all the concept understood by student, by using that resources student are able visualize the things and imagine all possibilities to

that are in the complex problem. As technology is keep on increasing everywhere including education sector and by using that student learn all complex concept in easy method to understand that concept.

Educational techniques have turned out to be a dynamic part of the inputs and outputs of the learning process. these practices have grown into a important part that plays a significant role in broadening the advancement of the components of the learning system, upgrading the rudiments of the curriculum, and making both more effective and resourceful. These components are used in the process of planning, implementing, evaluating, following-up and developing objectives. Machine learning has become a new frontier for higher education. Being one of the strongest newer technologies, machine learning plays the main rules in artificial intelligent and human interaction. machine learning can also aware the students that which topic is difficult in the given chapter likewise, student can focused on can concept. Virtual assistance plays a crucial role in education and is a good forum for machine learning use. A virtual assistant can interact in a conversation with students where if students have any doubt about any concept then virtual assistant help to understand the concept by using application and websites. Both machine learning and virtual assistants are used to interpret patterns and human interaction which supports deeper learning and provides users with fast and accurate data. this all resources are used to make all concept understood by student easily and teachers spent less effort to teach every student.

II. OBJECTIVES

Basically our idea is about to developed the virtual machine that machine learning makes use of AI in its effort to teach machines how to look for different types of data. basically we are creating a virtual assistant that hold all the data and information about all the and subject and concept which are teaches by teacher in the classroom. Machine learning is big factor of this scenario that will help us to create virtual assistant which more efficient and easy to use by Student. while teaching some teacher are not able to make understand all the concept for student and some Students understand the concept and catch the way of teaching but some are not understand the concept and even don't ask the teacher because of any reason. During the class teachers are not able to explain all the doubt and what is the use of those concept in real world. [why student should learn this topic?]

Students learn all the things whatever they want related to subject. By using that all students are satisfy with faculty and it is also less time consuming for teacher means they will spent less time on students. Assistant is basically for those students who are notable to understand concepts explain by teacher and it provides a lot information and definition with example by that student can learn. machine learning makes use of AI in its effort to teach machines how to look for different types of data.

III. METHODOLOGY

As technology is growing in day to day life so in education sector a virtual assistant will help all students to make learning more effective and efficient. Virtual assistant will create in python Jarvis which is made by advance technology as well as artificial intelligence. Machine learning algorithm works by having machines use software applications that assist the machine to determine outcomes that are accurate. By using algorithms, the machines can receive data, analyze it and then produce an output that is within an acceptable range. The machines also assist teachers by organizing the information being taught to students. The inclusion of machine learning in education has, therefore, made the education system more convenient for both teachers and students alike.

In this, explanation is about virtual assistant which is developed by python jarvis. it is very beneficial for student as well as teachers. Students can learn all the things whatever they want but it should be related to subject which faculty is teaching. it is not like robot it's a kind of box which hold all the data and information about subject.

TECHNICAL IMPLEMENTATION

The underlying technical implementation of the virtual assistant system starts with creating use cases for the product. the following technical specifications have been identified for building the virtual assistant.

software:-

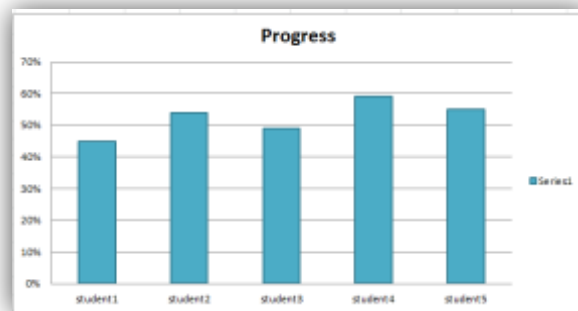
- 1]pyttsx3 library is use for converting the text to speech.
- 2]microphone is use for taking command or input from user.
- 3]pycharm IDE, python 3.8, etc.

to facilities interaction between the virtual assistant and the user, assistant known as jarvis. the virtual assistant experience with user has been remarkable. all students who provided feedback regarding their interactions reported positive experiences. we have

test the assistant with help of five students and their Progress is shown below:

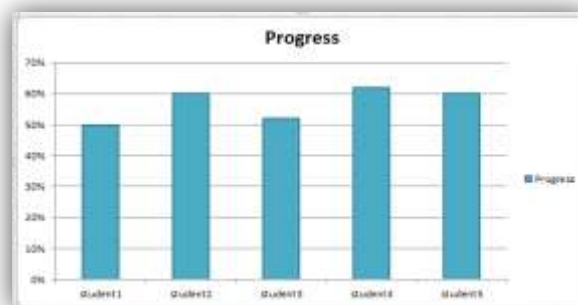
a) Student performance before the virtual assistant used:

| Number of Students | Progress |
|--------------------|----------|
| student1 | 45% |
| student2 | 54% |
| student3 | 49% |
| student4 | 59% |
| student5 | 55% |



b) Student performance after the virtual assistant used:

| | A | B | C |
|---|--------------------|----------|-----|
| 1 | Number of Students | Progress | |
| 2 | student1 | | 50% |
| 3 | student2 | | 60% |
| 4 | student3 | | 52% |
| 5 | student4 | | 62% |
| 6 | student5 | | 60% |
| 7 | | | |



IV. CONCLUSION

Machine learning with artificial intelligence has opened incredible possibilities in various fields. This is especially the case in terms of education sector and education related fields. This means that future learning environments are likely to be highly personalized, with the ability to help learners realize their utmost potential in the most fulfilling way. The advances made in adopting machine learning into education sector have saved the teachers' time, and technology is increasing rapidly so that helping the student increase their gaining the more knowledge, etc.

The future work on machine learning especially in the education context, shall witness the development of more sophisticated AI tools. There are multi perspectives for designing complex chatbots that will improve the sophistication of

REFERENCE

- (1) Cristina, C., Kaska, P. P., & Manolis, M. [2018]. AI in Education needs interpretable machine learning: Lessons from Open Learner Modelling. preprint arXiv, 14-15.
- (2) Danijel, K., Vedran, J., & Goran, Đ. [2018]. MACHINE LEARNING IN EDUCATION A SURVEY OF CURRENT RESEARCH TRENDS. 29TH DAAAM INTERNATIONAL SYMPOSIUM ON INTELLIGENT MANUFACTURING AND AUTOMATION, 4-5.
- (3) Jin, L. [2019]. Investigation on Potential Application of Artificial Intelligence in Preschool Children's Education, Department of Education, Bozhou University, No. 2266 Tangwang Road, Bozhou, Anhui, China. . Iop science, 5-6.
- (4) Maud, C., Aleksandr, K., Alexandra, K., & Anna, B. [2018]. Artificial Intelligence trends in education: a narrative overview. ELSEVIER, 8-9.
- (5) Mduma, & Neema. [2019]. A Survey of Machine Learning Approaches and Techniques for Student Dropout Prediction. Data science journal, 10-11.
- (6) Mu, P. [2019]. Research on Artificial Intelligence Education and Its Value orientation. web of proceedings, 13-14.
- (7) Nafea, I. T. [n.d.]. Machine Learning in Educational Technology. Web of Science™ Core Collection [BKCI].
- (8) William, V. C., Milton, R. C., & Xavier, P. P. [2020]. Improvement of an Online Education Model with the Integration of Machine Learning and Data Analysis in. Applied science, 17-18.
- (9) Sankar, D. S., Lu, M. D., & Dong, L. D. [2019]. Machine Learning meets quantum physics. arXiv preprint, 6-7.
- (10) Lattimer, B. Y., Hodges, J. L., & Lattimer, A. M. [2020]. Using Machine Learning in Physics-based Simulation of Fire. Elsevier, 11-12.
- (11) Alexander, R., Mike, W., David, R., Michael, K., Daniele, B., Alexander, H., et al. [2018]. Machine learning at the energy and intensity frontiers of particle physics. Nature, 7-8.
- (12) Henriikka, V., Tapani, T., Ilkka, J., Juho, K., Matti, T., & Teemu, V. [2020]. Machine learning for middle-schoolers Children as designers of machine-learning apps. IEEE, 8-9.
- (13) Lv Z, Li X. Virtual reality assistant technology for learning primary geography. In International Conference on Web-Based Learning. Springer International Publishing. ISO 690. 2015 November. pp. 31-40. DOI: 10.1007/978-3-319-32865-2_4
- (14) Tomei LA. Learning Tools and Teaching Approaches through ICT Advancements. Hershey, PA: Information Science Reference; 2013
- (15) Bhat AH, Patra S, Jena D. Machine learning approach for intrusion detection on cloud virtual machines. International Journal of Application or Innovation in Engineering & Management [IJAEM]. 2013;2[6]:56-66
- (16) Lafond D, Proulx R, Morris A, Ross W, Bergeron-Guyard A, Uliuru M. HCI dilemmas for context-aware support in intelligence analysis. Dalhousie Medical Journal. 2014

- (17) Lisetti C, Amini R, Yasavur U. Now all together: Overview of virtual health assistants emulating face-to-face health interview experience. *KI – Künstliche Intelligenz*. 2015;**29**[2]:161-172. DOI: 10.1007/s13218-015-0357-0.
- (18) Padró L, Stanilovsky E. Towards wider multilinguality. In: *Proceedings of the 8th International Conference on Language Resources and Evaluation*. 2012.
- (19) Brinson JR. Learning outcome achievement in non-traditional [virtual and remote] versus traditional [hands-on] laboratories: A review of the empirical research. *Computers & Education*. 2015;**87**:218-237. DOI: 10.1016/j.compedu.2015.07.003.
- (20) Ian, W., Dmytro, F., Dario, G. G., Tiina, T., & Gianluca, P. [2021]. *DOME: Recommendations for supervised machine learning validation in biology*. Publishing by Nature., 22-21.