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ARTIFICIAL INTELLECT AND NEURON NETWORKS BASED ON INTELLECTUAL STUDY SYSTEMS IMPROVEMENT

INTELLEKTUAL O‘QITISH TIZIMLARINI TAKOMILLASHTIRISHGA ASOSLANGAN SUN’IY INTELLEKT VA NEYRON TARMOQLAR

ИНТЕЛЛЕКТУАЛЬНЫЕ ОБУЧАЮЩИЕ СИСТЕМЫ, СОВЕРШЕНСТВОВАННЫЕ НА ОСНОВЕ ИСКУССТВЕННОГО ИНТЕЛЛЕКТА И НЕЙРОННЫХ СЕТЕЙ

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ABSTRACT

This article analyzes the role and importance of artificial intelligence (AI) and neural networks in improving intelligent learning systems. The possibilities of using artificial intelligence technologies in modern educational processes to enhance an individual approach and create a learning environment tailored to the abilities and needs of students are considered. Artificial intelligence models used for data processing and optimization in intelligent learning systems, their advantages and limitations are also discussed. This approach serves to develop innovative teaching methods and increase the efficiency of digital learning platforms.

Keywords: artificial intelligence, deep learning, neural networks, intelligent learning systems, virtual and augmented reality, digital teachers, learning systems.

ANNOTATSIYA

Ushbu maqolada intellektual o‘qitish tizimlarini takomillashtirishda sun’iy intellekt (SI) va neyron tarmoqlarning o‘rni va ahamiyati tahlil qilinadi. Zamonaviy ta’lim jarayonlarida sun’iy intellekt texnologiyalaridan foydalanish orqali individual yondashuvni kuchaytirish, talabalarning qobiliyat va ehtiyojlariga moslashtirilgan ta’lim muhitini yaratish imkoniyatlari ko‘rib chiqiladi. Shuningdek, intellektual o‘qitish tizimlarida ma’lumotlarni qayta ishlash va optimallashtirish uchun qo‘llaniladigan sun’iy intellekt modellari, ularning afzalliklari va cheklovlari muhokama etiladi. Mazkur yondashuv innovatsion ta’lim metodlarini rivojlantirish hamda raqamli ta’lim platformalarining samaradorligini oshirishga xizmat qiladi.

Kalit so‘zlar: sun’iy intellekt, chuqur o‘qitish, neyron tarmoqlar, intellektual o‘qitish tizimlari, virtual va kengaytirilgan haqiqat, raqamli o‘qituvchilar, o‘qitish tizimlari.

АННОТАЦИЯ

В статье анализируется роль и значение искусственного интеллекта (ИИ) и нейронных сетей в совершенствовании интеллектуальных систем обучения. Рассматриваются возможности усиления индивидуального подхода и создания образовательной среды, отвечающей способностям и потребностям обучающихся, за счет использования технологий искусственного интеллекта в современных образовательных процессах. В статье также рассматриваются модели искусственного интеллекта, используемые для обработки и оптимизации данных в системах интеллектуального обучения, их преимущества и ограничения. Такой подход способствует разработке инновационных методов обучения и повышению эффективности цифровых образовательных платформ.

Ключевые слова: искусственный интеллект, глубокое обучение, нейронные сети, интеллектуальные обучающие системы, виртуальная и дополненная реальность, цифровые учителя, собственные обучающие системы.

INTRODUCTION

In this era of rapidly developing technologies in every aspect of life in the world, with virtual worlds, remote offices, cloud technologies, online practices, highly sensitive devices, and artificial intelligence technologies being used, the need to train specialists who can use these technologies, improve them, discover new innovative technologies, fully understand world experience, and contribute to the country's development at various stages through their knowledge and skills is one of the most important tasks.

Artificial intelligence (SI) and neuron networks modern technologies development main from directions one is considered This technologies education process automation and in individualization important place holds Intellectual study systems (IOT) of students needs flexible way answer give receiver and education process efficient organize doer modern is the solution [2].

LITERATURE ANALYSIS AND METHODOLOGY

The issues of developing artificial intelligence systems are reflected in the research conducted by uzbek scientists M.Kamilov, T.Bekmuratov, Sh.Madrakhimov, N.Ignatyev. Russian scientists M.Akhmetov, A.Bazayeva, L.Bocharova, A.Lobanov conducted scientific research on the development of artificial intelligence systems and their application in the field of education.

Globally, scientists such as J. Anderson, P. Brusilovsky, M. Baldi have created important scientific foundations in their research on the integration of artificial intelligence and educational technologies. Their works cover important areas such as: adaptive learning systems, determining individual student learning indicators using neural networks, and optimizing the learning process based on machine learning. The works of scientists such as A. Graves, LeCun, Y. Bengio, G. Hinton on neural networks are the main scientific source in this area. Based on their research, recurrent neural networks (RNN) and deep learning technologies are successfully used in educational systems.

Research on artificial intelligence emphasizes that everything in the universe works within a certain algorithm. Accordingly, consciousness is the result of a mathematically very complex algorithm. For most authors of artificial intelligence today, the brain is a structure that performs its functions based on the laws of the external world. This means that artificial intelligence has a rational nature [3].

This Creating IOT in the article and them improvement for software supply work exit issues see will be released.

1. Intellectual study systems importance.

Intellectual study systems study process the following methods with improves: Individual approach: Every one individual education to the student direction work exit opportunity Data analysis do: Students activities observation and their strong and weak sides to determine Real time mode Feedback: Tests check, to assignments answer to give such as processes fast done increase

2. Artificial intellect and neuron networks place.

Artificial intellect and neuron networks intellectual study in systems the following functions executes: Data again work and analysis do: SI algorithms big in volume information again work and of students study styles in determining help gives Neuron networks using projection: Neuron networks students which topics good own that he can't in advance determine what is needed study materials recommendation is enough Natural the language again performance (NLP): Training systems of students to the questions automatic answer to give and their written works quality evaluation enable gives.

3. Software supply improvement directions.

Creating IOT software supply the following main aspects own into take Required: Modular Architecture: The system easy expand and update opportunity Many p in the language Support: Education in the process different languages apply from NLP technologies for use Adaptable interface: Students and teachers for comfortable and intuitive interface create Cloud Technologies: Information safe storage and to them fast access provide Open APIs: System another software supplies with integration to do for open interfaces work exit.

4. Design and done increase stages.

Intellectual study systems create in the process the following stages Available: Requirements identification: of students needs and from the system pending the results mark SI models study: Neuron networks and other SI algorithms necessary data based on teaching User interface work exit: Students and teachers for comfortable platform create Test and optimization: System different in the circumstances try to see and his efficiency increase.

5. Future opportunities and prospects.

Intellectual study systems education in the field revolutionary changes take is coming In the future this systems the following opportunities present reach pending: Real time mode of virtual coaches. Immersive using technologies (AR/VR). interactive lessons. Genetic algorithms based on more flexible education methods.

Today's in the day education in the field artificial intelligence (SI) and neuron networks of technologies application news and revolutions is creating. Traditional study methods students and of teachers needs perfect level suitable is not coming because each one students of the group study style and goals different [4]. Therefore, intellectual study systems (IOT) training process personalization and in automation important role plays In this case, artificial intellect and neuron networks systems students experience improvement, training efficiency increase and education process in development big opportunities creates.

1. Intellectual Study Systems: Definition and Importance.

Intellectual study systems (IOT) is artificial intellect and car learning technologies based on systems they are of students appropriation process automatic respectively observes, as well as students optimal training for materials and methodologies present is enough of IOT systems main purpose of students' knowledge and skills maximum level development and to individual needs suitable study process is to create.

2. Artificial Intellect and Neuron Networks role.

- **Artificial intelligence (SI)** technologies education to systems automatic decisions acceptance to do opportunity gives SI systems of students work speed, success level and weak sides watching them analysis to do through sure recommendations and approaches work comes out
- **Neuron networks** while complicated information analysis to do and study for is used. They are of students study styles and learning in the process shortcomings identify them customized lesson plans work comes out An example for, the neuron networks using education of materials which parts students for complicated or easy that to determine can.

3. Software of supply Improvement.

Intellectual study systems efficient performance for their software supply the following aspects attention focus should:

- **Adaptable Architecture:** IOT systems module based on construction need, that is they are easy expansion and update possible to be need With that together , of the system all parts mutually suitable coming and integration to be done necessary.
- **Many p in the language support:** Education systems different in languages service to show need Natural language processing (NLP) technologies using system students by given to questions automatic respectively answer to give as well as texts analysis to them right thoughts notice opportunity have to be need.
- **Interactive and Adaptable User Interface:** Study system interface student and teacher for intuitive and comfortable to be need and this to the students system with at work difficulties not giving birth for necessary.
- **Data safe storage and analysis do:** Software of supply in operation data safety very important Therefore, the data cloudy in systems storage and to them access for safe methods application necessary.
- **Artificial intellect based on analysis and forecasting:** IOT systems a student activities observation and analysis in doing artificial of intellect strong from the sides use need. For example , the system students study to the activity looking in the future they are which in subjects to difficulties face to come in advance forecast to do can.

4. Creation of IOT Stages.

Intellectual study system in creating the following to stages action to do important:

1. **requirements identify:** of the system purpose and functional requirements mark har one student for customized education direction create for to the system students analysis to do opportunity to give
2. **The model study:** Artificial intellect and neuron networks model necessary data based on teaching of this process success of the system how much right recommendations to give effect does.
3. **Test and optimization:** System in real conditions try to see and him more efficient performance for optimization . At this stage the system real to the students present reach and their thoughts get necessary.
4. **Integration do:** The system another education platforms and tools with integration to do In this way to the students more wider opportunities create possible will be.

5. In the future of the IOT Potentially.

IOT systems in the future more development and education individualization in doing and efficient in education changes input can. In the future the following technologies in IOT systems application expected:

- **Virtual and Augmented Reality (AR/VR):** To the students new knowledge study process more interactive and immersive to do virtual reality for and extended truth technologies is used.
- **Digital teachers:** Artificial intellect using real time mode to the students virtual tutors to help create.
- **His own to teach systems:** Car learning and deep from learning (deep learning) technologies used without, systems himself updated and by improving goes.

CONCLUSION

Artificial intellect and neuron networks using intellectual study systems create education process more to personalization possibility creates. Software supply improvement through, readers and to teachers effective, intuitive and flexible systems present reach possible will be And this education field in

development important step will be Artificial intellect and neuron networks based on intellectual study systems create education of the field development big contribution adds Software supply improvement through more innovative and efficient education processes organize reach can. Such systems not only of students knowledge increases, perhaps in them independent thinking and new knowledge appropriation ability develops.

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