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"FIZIKA, MATEMATIKA VA SUN'IY INTELLEKT TEXNOLOGIYALARINING DOLZARB MUAMMOLARI"

XALQARO ILMIY-NAZARIY ANJUMAN MATERILLARI

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Quyida oliy ta’limda foydalanish uchun mavjud bo‘lgan ba’zi asosiy sun’iy intellekt texnologiyalari keltirilgan:

1. Ma’lumot tahlili va akademik natijalarni kuzatish uchun - O‘quv yutuqlarini tahlil qilish: IBM Watson Analytics va Tableau kabi platformalar talabalarning o‘quv natijalarini tahlil qilish va ularning rivojlanishini kuzatish imkoniyatini beradi. Bu o‘qituvchilar va universitetlar ma’lumotlar asosida qarorlar qabul qilishlariga yordam beradi [3,4].
2. Virtual o‘quvchi yordamchilar va o‘qitish bo‘yicha yordamchilar - Chatbotlar va virtual yordamchilar: O‘quv jarayonida yordam beruvchi virtual yordamchilar va chatbotlar, masalan, ChatGPT yoki IBM Watson Assistant talabalar bilan interaktiv muloqot qilib, ularning savollariga javob beradi va ularga yordam beradi [3,4].
3. Matn va nutqni tahlil qilish vositalari - Matn tahlili vositalari: Talabalarning yozma ishlarini avtomatik tahlil qilish uchun Grammarly yoki Turnitin kabi vositalar plagiatni aniqlash va matnning grammatik sifatini baholashda yordam beradi. - Nutqni tahlil qilish: Siri, Google Assistant kabi ovozli yordamchilar talabalar uchun audio formatda ta’lim olish imkoniyatlarini kengaytiradi va o‘quv materiallarini ovoz chiqarib o‘qib beradi [3,4].

Xulosa. Sun’iy intellekt o’quvchi va o’qituvchilarga innovatsion ta’lim uslubidan foydalanish, ta'lim materiallarini ishlab chiqish, individual shug’ullanish tajribalarni va ta'lim sifatini oshirishda samarali yordam beradi.

Foydalanilgan adabiyotlar ro‘yxati:

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O‘SIMLIK BARGIDAGI KASALLIKLARNI BASHORAT QILISH VA UNGA TAVSIYALAR BERISHDA SUN‘IY INTELLEKT TEXNOLOGIYALARINING ROLI.

Saidov Umedjon Yusuf o’g’li
O’qituvchi, Buxoro davlat universiteti

Annotatsiya. Ushbu ilmiy maqolada sun’iy intellekt texnologiyalaridan foydalanilayotgan hozirgi zamonaviy o‘simlik kasalliklarini aniqlovchi dasturlar – PlantVillage, Plantix va Nuru – tahlil qilinadi. Har bir dasturda qo‘llanilayotgan algoritmlar, ularning afzalliklari va amaliy qo‘llanish doiralari yoritiladi. Grafik chizma orqali dasturlar aniqligi va tavsiya sifati foizlarda taqqoslab ko‘rsatiladi.

Kalit so‘zlar: sun’iy intellekt, qishloq xo‘jaligi, o‘simlik kasalliklari, PlantVillage, Plantix, Nuru, tahlil, diagnostika, tavsiya.

Аннотация: В данной научной статье рассматриваются современные приложения по диагностике болезней растений на основе технологий искусственного интеллекта — PlantVillage, Plantix и Nuru. Анализируются используемые алгоритмы, преимущества и сферы применения каждой системы. Представлена сравнительная диаграмма точности и качества рекомендаций.

Ключевые слова: искусственный интеллект, сельское хозяйство, болезни растений, PlantVillage, Plantix, Nuru, анализ, диагностика, рекомендации.

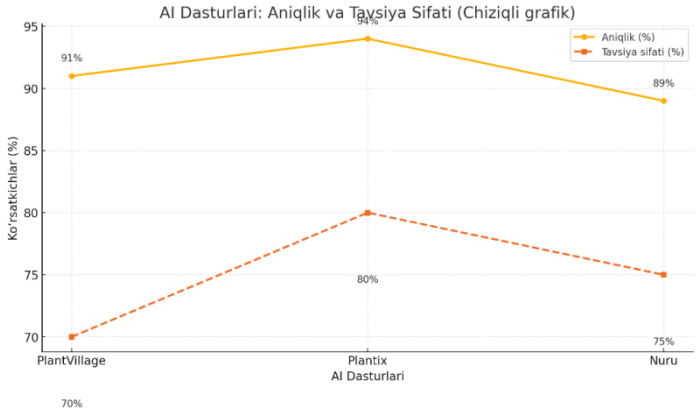
Abstract: This scientific article examines the most widely used plant disease detection applications that employ artificial intelligence technologies — PlantVillage, Plantix, and Nuru. The study focuses on the algorithms used in each system, their practical advantages, and application contexts. A comparative graph illustrates the accuracy and recommendation quality of each tool.

Keywords: artificial intelligence, agriculture, plant diseases, PlantVillage, Plantix, Nuru, analysis, diagnosis, recommendation.

Kirish. Zamonaviy qishloq xo‘jaligida o‘simlik kasalliklarini erta aniqlash va unga qarshi samarali choralarni ko‘rish hosildorlikni oshirish va zararlarni kamaytirishning muhim omilidir. An’anaviy tashxis qo‘yish usullari ko‘p vaqt va tajriba talab qilgani sababli, sun’iy intellekt (AI) texnologiyalariga asoslangan dasturlar ushbu sohada katta yutuqlarga erishmoqda[1]. PlantVillage, Plantix va Nuru singari AI ilovalari orqali barg tasvirlari asosida kasalliklarni aniqlash va kerakli tavsiyalarni ishlab chiqish imkoniyati yaratildi.

Metodologiya.Tadqiqot metodologiyasi sifatida mavjud AI ilovalari funksiyalarini tahlil qilish, ularning ishlash algoritmlari va afzalliklarini baholash yo‘li tanlandi. Dasturlar CNN (Convolutional Neural Networks), lokal matching va metadata asosida ishlovchi algoritmlar bilan o‘rganildi. Har bir dastur bo‘yicha aniqlik darajasi va foydalanuvchiga berilgan tavsiyalar sifat ko‘rsatkichlari umumlashtirildi. Statistika grafik chizma orqali tasvirlandi.

Natija. Tahlil qilingan uchta asosiy AI ilovalari – PlantVillage, Plantix va Nuru – quyidagi natijalarni berdi (1-rasm).



1-rasm AI dasturlarining aniqlik va tavsiya sifati tahlili.

Plantix ilovasi aniqlik va tavsiya sifati bo‘yicha eng yuqori ko‘rsatkichlarga ega bo‘ldi. Nuru ilovasi esa offline ishlash va ko‘p tillilik jihatidan ustunlikka ega. PlantVillage ochiq manbali loyiha bo‘lib, keng kasalliklar bazasini o‘z ichiga olgan[2].

Ushbu AI ilovalari orqali o‘simlik kasalliklarini diagnostika qilish sezilarli darajada soddalashdi. Har bir ilovaning o‘ziga xos afzalliklari mavjud bo‘lsa-da, ularning umumiy jihati – barg tasviridan foydalangan holda avtomatik kasallik aniqlash va umumiy tavsiyalar berishdir[3]. AI texnologiyalari natijasida dehqonlar kasalliklarning tarqalishini erta aniqlab, resurslardan samarali foydalanmoqda. Bundan tashqari, monitoring tizimlari bilan birga ishlovchi AI modellar kasallik tarqalishining geografik xaritasini ham tuzishga xizmat qilmoqda[4].

Xulosa. Sun’iy intellekt texnologiyalarining qishloq xo‘jaligidagi qo‘llanilishi ayniqsa o‘simlik sog‘lig‘i monitoringida katta ahamiyat kasb etmoqda. PlantVillage, Plantix va Nuru ilovalari orqali kasalliklarni erta bosqichda aniqlash va unga qarshi zarur choralarni belgilash imkoniyati yaratildi. Kelgusida bu texnologiyalarni yanada takomillashtirish va lokal sharoitlarga moslashtirish orqali ularning samaradorligini oshirish mumkin.

Foydalanilgan adabiyotlar:

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MASOFAVIY TA'LIMDA SUN'IY INTELLEKT TEXNOLOGIYALARINI QO'LLASH

Hojiyev Nozimjon Yoqubovich
O'qituvchi, Buxoro davlat universiteti
Saidov Umedjon Yusuf o'g'li
O'qituvchi, Buxoro davlat universiteti

Annotatsiya. Ushbu maqolada 2022–2025 yillar oralig'ida masofaviy ta'lim tizimiga sun'iy intellekt texnologiyalarini tatbiq etishning holati, o'sish tendensiyalari, qo'llanilayotgan asosiy yo'nalishlar va ularning samaradorligi ilmiy tahlil etilgan. Shuningdek, AI vositalarining ta'limdagi moslashuvchanligi, diagnostik imkoniyatlari, o'quv faoliyatini avtomatlashtirishdagi o'rni chuqur yoritilgan. Grafik va statistik materiallar asosida chuqur tahlil berilgan.

Kalit so'zlar: sun'iy intellekt, masofaviy ta'lim, adaptiv ta'lim, baholash tizimi, chatbotlar, AI diagnostika.

Аннотация: В статье проанализировано внедрение технологий искусственного интеллекта в систему дистанционного образования в период 2022–2025 годов. Рассматривается, как использование ИИ-платформ (адаптивные системы, автоматизированное оценивание, виртуальные помощники) способствует индивидуализации и повышению эффективности учебного процесса. Представлены графические и статистические данные, иллюстрирующие динамику развития ИИ в образовании.

Ключевые слова: искусственный интеллект, дистанционное обучение, адаптивные системы, автоматическая оценка, чат-боты, мониторинг ИИ.

Abstract: This article analyzes the application of artificial intelligence technologies in distance education from 2022 to 2025. It explores how AI tools such as adaptive platforms, automated assessment systems, and virtual assistants contribute to personalized, efficient, and data-driven learning processes. Graphs and statistical data illustrate the growth and effectiveness of AI integration in digital education systems.

Keywords: artificial intelligence, distance learning, adaptive systems, automated assessment, chatbots, AI monitoring.

Kirish. So'nggi yillarda raqamli transformatsiyaning jadallashuvi, ayniqsa pandemiya sharoitidan so'ng, masofaviy ta'limga bo'lgan ehtiyojni keskin oshirdi. Ushbu jarayonda sun'iy intellekt texnologiyalari ta'lim tizimining ajralmas qismiga aylandi[1]. 2022–2025 yillar davomida dunyo bo'ylab va O'zbekiston ta'lim tizimida sun'iy intellekt elementlari: adaptiv platformalar, chatbotlar, avtomatlashtirilgan baholash vositalari, o'quvchi monitoring tizimlari amaliyotga faol joriy qilinmoqda. Masofaviy ta'lim nafaqat zamonaviy axborot-kommunikatsiya texnologiyalariga tayangan holda tashkil etilishi, balki o'qitish jarayonining metodologik, psixologik va pedagogik