



IQTISODIYOT & TARAQQIYOT

Ijtimoiy, iqtisodiy, texnologik, ilmiy, ommabop jurnal

No6
MAXSUS SON



BAKALAVR TALABALARINING MAQOLALARI TO'PLAMI



ISSN: 2992-8982

<https://yashil-iqtisodiyot-taraqqiyot.uz/>

2026



IQTISODIYOT&TARAQQIYOT

Ijtimoiy, iqtisodiy, texnologik, ilmiy, ommabop jurnal

Bosh muharrir:

Sharipov Kongirاتبay Avezimbetovich

Bosh muharrir o'rinbosari:

Karimov Norboy G'aniyevich

Muharrir:

Qurbonov Sherzod Ismatillayevich

*Elektron nashr.
2026-yil, iyun.*

Tahrir hay'ati:

Salimov Oqil Umrzoqovich, O'zbekiston Fanlar akademiyasi akademigi
Abduraxmanov Kalandar Xodjayevich, O'zbekiston Fanlar akademiyasi akademigi
Sharipov Kongirاتبay Avezimbetovich, texnika fanlari doktori (DSc), professor
Rae Kvon Chung, Janubiy Koreya, TDIU faxriy professori, "Nobel" mukofoti laureati
Osman Mesten, Turkiya parlamenti a'zosi, Turkiya – O'zbekiston do'stlik jamiyati rahbari
Axmedov Durbek Kudratillayevich, iqtisodiyot fanlari doktori (DSc), professor
Axmedov Sayfullo Normatovich, iqtisodiyot fanlari doktori (DSc), professor
Abduraxmanova Gulnora Kalandarovna, iqtisodiyot fanlari doktori (DSc), professor
Kalonov Muxiddin Baxritdinovich, iqtisodiyot fanlari doktori (DSc), professor
Siddiqova Sadoqat G'afforovna, pedagogika fanlari bo'yicha falsafa doktori (PhD)
Xudoyqulov Sadirdin Karimovich, iqtisodiyot fanlari doktori (DSc), professor
Maxmudov Nosir, iqtisodiyot fanlari doktori (DSc), professor
Yuldashev Mutallib Ibragimovich, iqtisodiyot fanlari doktori (DSc), professor
Samadov Asqarjon Nishonovich, iqtisodiyot fanlari nomzodi, professor
Slizovskiy Dimitriy Yegorovich, texnika fanlari doktori (DSc), professor
Mustafakulov Sherzod Igamberdiyevich, iqtisodiyot fanlari doktori (DSc), professor
Axmedov Ikrom Akramovich, iqtisodiyot fanlari doktori (DSc), professor
Eshtayev Alisher Abdug'aniyevich, iqtisodiyot fanlari doktori (DSc), professor
Xajiyev Baxtiyor Dushaboyevich, iqtisodiyot fanlari doktori (DSc), professor
Hakimov Nazar Hakimovich, falsafa fanlari doktori (DSc), professor
Musayeva Shoira Azimovna, iqtisodiyot fanlari bo'yicha falsafa doktori (PhD), professor
Ali Konak (Ali Ko'nak), iqtisodiyot fanlari doktori (DSc), professor (Turkiya)
Cham Tat Huei, falsafa fanlari doktori (PhD), professor (Malayziya)
Foziljonov Ibrohimjon Sotvoldix'o'ja o'g'li, iqtisodiyot fanlari bo'yicha falsafa doktori (PhD), dots.
Utayev Uktam Choriyevich, O'z.Respub. Bosh prokuraturasi boshqarma boshlig'i o'rinbosari
Ochilov Farkhod, O'zbekiston Respublikasi Bosh prokuraturasi IJQKD boshlig'i
Buzrukhonov Sarvarxon Munavvarxonovich, iqtisodiyot fanlari nomzodi, dotsent
Axmedov Javohir Jamolovich, iqtisodiyot fanlari bo'yicha falsafa doktori (PhD)
Toxirov Jaloliddin Ochil o'g'li, texnika fanlari bo'yicha falsafa doktori (PhD), katta o'qituvchi
Bobobekov Ergash Abdumalikovich, iqtisodiyot fanlari bo'yicha falsafa doktori (PhD), v.b. dots.
Djudi Smetana, pedagogika fanlari nomzodi, dotsent (AQSH)
Krissi Lyuis, pedagogika fanlari nomzodi, dotsent (AQSH)
Glazova Marina Viktorovna, Iqtisodiyot fanlari doktori (Moskva)
Nosirova Nargiza Jamoliddin qizi, iqtisodiyot fanlari bo'yicha falsafa doktori (PhD), dotsent
Sevil Piriyeve Karaman, falsafa fanlari doktori (PhD) (Turkiya)
Mirzaliyev Sanjar Makhamatjon o'g'li, TDIU ITI departamenti rahbari
Ochilov Bobur Baxtiyor o'g'li, TDIU katta o'qituvchisi
Golisheva Yelena Vyacheslavovna, Iqtisodiyot fanlari nomzodi, dotsent.
Abdukarimova Dinara Rustamxanovna, bank-moliya akademiyasi professori, DSc., professor.
Ikramov Murod Akramovich, iqtisodiyot fanlari doktori (DSc), professor



IQTISODIYOT&TARAQQIYOT

Ijtimoiy, iqtisodiy, texnologik, ilmiy, ommabop jurnal

Editorial board:

Salimov Okil Umrzokovich, Academician of the Academy of Sciences of Uzbekistan
Abdurakhmanov Kalandar Khodjayevich, Academician of the Academy of Sciences of Uzbekistan
Sharipov Kongirاتبay Avezimbetovich, Doctor of Technical Sciences (DSc), Professor
Rae Kwon Chung, South Korea, Honorary Professor at TSUE, Nobel Prize Laureate
Osman Mesten, Member of the Turkish Parliament, Head of the Turkey–Uzbekistan Friendship Society
Akhmedov Durbek Kudratillayevich, Doctor of Economic Sciences (DSc), Professor
Akhmedov Sayfullo Normatovich, Doctor of Economic Sciences (DSc), Professor
Abdurakhmanov Gulnora Kalandarovna, Doctor of Economic Sciences (DSc), Professor
Kalonov Mukhiddin Bakhridinovich, Doctor of Economic Sciences (DSc), Professor
Siddikova Sadokat Gafforovna, Doctor of Philosophy (PhD) in Pedagogical Sciences
Khudoykulov Sadirdin Karimovich, Doctor of Economic Sciences (DSc), Professor
Makhmudov Nosir, Doctor of Economic Sciences (DSc), Professor
Yuldashev Mutallib Ibragimovich, Doctor of Economic Sciences (DSc), Professor
Samadov Askarjon Nishonovich, Candidate of Economic Sciences, Professor
Slizovskiy Dmitriy Yegorovich, Doctor of Technical Sciences (DSc), Professor
Mustafakulov Sherzod Igamberdiyevich, Doctor of Economic Sciences (DSc), Professor
Akhmedov Ikrom Akramovich, Doctor of Economic Sciences (DSc), Professor
Eshtayev Alisher Abduganiyevich, Doctor of Economic Sciences (DSc), Professor
Khajiyev Bakhtiyor Dushaboyevich, Doctor of Economic Sciences (DSc), Professor
Khakimov Nazar Khakimovich, Doctor of Philosophy (DSc), Professor
Musayeva Shoira Azimovna, Doctor of Philosophy (PhD) in Economic Sciences, Professor
Ali Konak, Doctor of Economic Sciences (DSc), Professor (Turkey)
Cham Tat Huei, Doctor of Philosophy (PhD), Professor (Malaysia)
Foziljonov Ibrokhimjon Sotvoldikhoja ugli, Doctor of Philosophy (PhD) in Economic Sciences, Associate Professor
Utayev Uktam Choriyevich, Deputy Head of Department, Prosecutor General's Office of Uzbekistan
Ochilov Farkhod, Head of DCEC, Prosecutor General's Office of Uzbekistan
Buzrukkhonov Sarvarkhon Munavvarkhonovich, Candidate of Economic Sciences, Associate Professor
Akhmedov Javokhir Jamolovich, Doctor of Philosophy (PhD) in Economic Sciences
Tokhirov Jaloliddin Ochil ugli, Doctor of Philosophy (PhD) in Technical Sciences, Senior Lecturer
Bobobekov Ergash Abdumalikovich, Doctor of Philosophy (PhD) in Economic Sciences, Acting Associate Professor
Judi Smetana, Candidate of Pedagogical Sciences, Associate Professor (USA)
Chrissy Lewis, Candidate of Pedagogical Sciences, Associate Professor (USA)
Glazova Marina Victorovna, Doctor of Sciences in Economics (Moscow)
Nosirova Nargiza Jamoliddin kizi, Doctor of Philosophy (PhD) in Economic Sciences, Associate Professor
Sevil Piriyeva Karaman, Doctor of Philosophy (PhD) (Turkey)
Mirzaliyev Sanjar Makhamatjon ugli, Head of the Department of Scientific Research and Innovations, TSUE
Ochilov Bobur Bakhtiyor ugli, Senior lecturer at TSUI
Golisheva Yelena Vyacheslavovna, Candidate of Economic Sciences, Associate Professor.
Abdukarimova Dinara Rustamkhanovna, Doctor of Economic Sciences (DSc), Professor
Ikramov Murod Akramovich, Doctor of Economic Sciences (DSc), Professor

Ekspertlar kengashi:

Berkinov Bazarbay, iqtisodiyot fanlari doktori (DSc), professor
Po'latov Baxtiyor Alimovich, texnika fanlari doktori (DSc), professor
Aliyev Bekdavlat Aliyevich, falsafa fanlari doktori (DSc), professor
Isakov Janabay Yakubbayevich, iqtisodiyot fanlari doktori (DSc), professor
Xalikov Suyun Ravshanovich, iqtisodiyot fanlari nomzodi, dotsent
Rustamov Ilhomiddin, iqtisodiyot fanlari nomzodi, dotsent
Hakimov Ziyodulla Ahmadovich, iqtisodiyot fanlari doktori, dotsent
Kamilova Iroda Xusniddinovna, iqtisodiyot fanlari bo'yicha falsafa doktori (PhD)
G'afurov Doniyor Orifovich, pedagogika fanlari bo'yicha falsafa doktori (PhD)
Fayziyev Oybek Raximovich, iqtisodiyot fanlari bo'yicha falsafa doktori (PhD), dotsent
Tuxtabayev Jamshid Sharafetdinovich, iqtisodiyot fanlari bo'yicha falsafa doktori (PhD), dotsent
Xamidova Faridaxon Abdulkarim qizi, iqtisodiyot fanlari doktori, dotsent
Yaxshiboyeva Laylo Abdisattorovna, katta o'qituvchi
Babayeva Zuhra Yuldashevna, mustaqil tadqiqotchi
Komilova Nilufar Karshiboyevna, Geografiya fanlari doktori, professori
Umirzoqov Ja'sur Artiqboy o'g'li, iqtisodiyot fanlari doktori (DSc), dotsent
Zebo Kuldasheva, iqtisodiyot fanlari doktori (DSc), dotsent

Board of Experts:

Berkinov Bazarbay, Doctor of Economic Sciences (DSc), Professor
Pulatov Bakhtiyor Alimovich, Doctor of Technical Sciences (DSc), Professor
Aliyev Bekdavlat Aliyevich, Doctor of Philosophy (DSc), Professor
Isakov Janabay Yakubbayevich, Doctor of Economic Sciences (DSc), Professor
Khalikov Suyun Ravshanovich, Candidate of Economic Sciences, Associate Professor
Rustamov Ilhomiddin, Candidate of Economic Sciences, Associate Professor
Khakimov Ziyodulla Akhmadovich, Doctor of Economic Sciences, Associate Professor
Kamilova Iroda Xusniddinovna, Doctor of Philosophy (PhD) in Economics
Gafurov Doniyor Orifovich, Doctor of Philosophy (PhD) in Pedagogy
Fayziyev Oybek Raximovich, Doctor of Philosophy (PhD) in Economics, Associate Professor
Tukhtabayev Jamshid Sharafetdinovich, Doctor of Philosophy (PhD) in Economics, Associate Professor
Khamidova Faridaxon Abdulkarimovna, Doctor of Economic Sciences, Associate Professor
Yakhshiboyeva Laylo Abdisattorovna, Senior Lecturer
Babayeva Zuhra Yuldashevna, Independent Researcher
Komilova Nilufar Karshiboyevna, Doctor of Geographical Sciences, Professor
Umirzokov Jasur Artiqboy ugli, Doctor of Economic Sciences (DSc), Associate Professor
Zebo Kuldasheva, Doctor of Economic Sciences (DSc), Associate Professor

- 08.00.01 Iqtisodiyot nazariyasi
- 08.00.02 Makroiqtisodiyot
- 08.00.03 Sanoat iqtisodiyoti
- 08.00.04 Qishloq xo'jaligi iqtisodiyoti
- 08.00.05 Xizmat ko'rsatish tarmoqlari iqtisodiyoti
- 08.00.06 Ekonometrika va statistika
- 08.00.07 Moliya, pul muomalasi va kredit
- 08.00.08 Buxgalteriya hisobi, iqtisodiy tahlil va audit
- 08.00.09 Jahon iqtisodiyoti
- 08.00.10 Demografiya. Mehnat iqtisodiyoti
- 08.00.11 Marketing
- 08.00.12 Mintaqaviy iqtisodiyot
- 08.00.13 Menejment
- 08.00.14 Iqtisodiyotda axborot tizimlari va texnologiyalari
- 08.00.15 Tadbirkorlik va kichik biznes iqtisodiyoti
- 08.00.16 Raqamli iqtisodiyot va xalqaro raqamli integratsiya
- 08.00.17 Turizm va mehmonxona faoliyati

Muassis: "Ma'rifat-print-media" MChJ

Hamkorlarimiz: Toshkent davlat iqtisodiyot universiteti, O'zR Tabiat resurslari vazirligi, O'zR Bosh prokuraturasi huzuridagi IJQK departamenti.

Jurnalning ilmiyligi:

“Yashil” iqtisodiyot va taraqqiyot” jurnali

O'zbekiston Respublikasi
Oliy ta'lim, fan va innovatsiyalar
vazirligi huzuridagi Oliy
attestatsiya komissiyasi
rayosatining
2023-yil 1-apreldagi
336/3-sonli qarori bilan
ro'yxatdan o'tkazilgan.



MUNDARIJA

TURIZMDA INVESTITSION MUHITNI YAXSHILASH VA XORIJIY INVESTITSİYALARNI JALB ETISHNING TASHKILIY-IQTISODIY MEXANIZMLARI	21
Ergashkulov Muyinjon Umedovich	
“AVTO PORLOQ KELAJAK 2020” XKNING TASHKILIY-IQTISODIY TAVSIFI VA MOLIYAVIY FAOLIYATI TAHLILI	28
Misirov Asliddin Mamasobirovich Eshdavatov T.A.	
MOLIYAVIY HOLAT TO'G'RISIDAGI HISOBOT KO'RSATKICHLARINI SHAKLLANTIRISH METODIKASI.....	32
Misirov Asliddin Mamasobirovich Qodirov B.	
MOLIYAVIY HOLAT TO'G'RISIDAGI HISOBOTNI TUZISH VA TAQDIM ETISHNING ME'YORIYHUQUQIY ASOSLARI	36
Misirov Asliddin Mamasobirovich Saidmurodov J.N.	
“AVTO PORLOQ KELAJAK 2020” XKD MOLIYAVIY HOLAT TO'G'RISIDAGI HISOBOTNI TUZISH AMALIYOTI	40
Misirov Asliddin Mamasobirovich Xalilov J.H.	
MOLIYAVIY HOLAT TO'G'RISIDAGI HISOBOTNING IQTISODIY MOHIYATI VA AHAMIYATI.....	45
Misirov Asliddin Mamasobirovich Xamroqulov A.X.	
GEOMETRIC FIGURE DRAWING USING MODERN PROGRAMMING LANGUAGES.....	49
Daminova Barno Esanovna Asrorova Nilufar Bobur qizi Botirova Shodiya Turdimurod qizi	
RAQAMLI IQTISODIYOT SHAROITIDA TIBBIY XIZMAT KO'RSATISHNI TASHKIL ETISHNING XORIJ TAJRIBALARI	56
Baxtiyorova Vasila Muzaffarovna	
XORAZM VILOYATIDA YASHIL IQTISODIYOTNI RIVOJLANTIRISH ORQALI BARQAROR IQTISODIY O'SISHNI TA'MINLASHNING IQTISODIY-EKOLOGIK MEXANIZMLARINI TAKOMILLASHTIRISH.....	60
Kurbanbayev Shoxruh Mirzo Zafar o'g'li	
XOTIN-QIZLAR BANDLIGI VA DAROMADLARINI OSHIRISHNING IJTIMOIY-IQTISODIY MUAMMOLARI.....	65
Kozimjonova Saidaxon Alisher qizi	
GLOBAL IQTISODIY TRANSFORMATSIYA SHAROITIDA TASHQI SAVDO AYLANMASI, EKSPORT VA IMPORT KO'RSATKICHLARINI OPTIMALLASHTIRISH STRATEGIYALARI	69
Nematullayev Hamidullo Azizillo o'g'li	



O'ZBEKISTONDA GID VA EKSKURSOVODLAR SOHASIDA INNOVATSIYALAR VA YANGILIKLAR.....	73
Ergasheva Iroda Ibrohim qizi	
Xojaqulova Nargiza	
MA'LUMOTLAR BAZASIDA MURAKKAB SO'ROVLAR YARATISHNING NAZARIY	
ASOSLARI, FORMAL MODELLARI VA OPTIMALLASHTIRISH NAZARIYASI.....	78
Daminova Barno Esanovna	
Shermatova Shaxzoda Bakhtiyor qizi	
Ne'matova Sevinch Ismat qizi	
Xolmakhmatov Navruzбек Farrux o'g'li	
THE ROLE OF CLOUD COMPUTING IN ENHANCING ENTERPRISE PERFORMANCE.....	83
Daminova Barno Esanovna	
Jumayev Khayit Fayzullo ugli	
Normuminov Zayniddin Bekmurod ugli	
Bozorov Ilkhom Soatmurod ugli	
ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING APPLICATIONS	
IN MODERN INFORMATION SYSTEMS.....	88
Daminova Barno Esanovna	
Nurmamatov Nodirbek	
Turdimurodov Tulkin	
Xudoyorov Sardor	



ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING APPLICATIONS IN MODERN INFORMATION SYSTEMS

Daminova Barno Esanovna

Associate Professor, Department of Algorithms and Programming Technologies, Karshi State University
<https://orcid.org/0009-0001-4211-6082>

Nurmamatov Nodirbek

Turdimurodov Tulkin

Xudoyorov Sardor

Students of Karshi State University

Abstract. The rapid development of Artificial Intelligence (AI) and Machine Learning (ML) technologies has significantly transformed modern information systems across various sectors. This study aims to analyze the role, applications, benefits, and challenges of AI and ML in contemporary information systems. The research methodology is based on a systematic review of scientific literature, comparative analysis of existing AI applications, and evaluation of their effectiveness in business, healthcare, education, cybersecurity, and public administration. The results indicate that AI and ML contribute to improved decision-making, automation, operational efficiency, and predictive analytics. However, challenges related to data privacy, algorithmic bias, and ethical considerations remain significant barriers to wider adoption. The study concludes that successful integration of AI and ML technologies requires comprehensive data governance policies, advanced infrastructure, and continuous development of human competencies.

Keywords: artificial intelligence, machine learning, information systems, data analytics, automation, deep learning, neural networks, decision support systems, predictive analytics, digital transformation.

Annotatsiya. Sun'iy intellekt (AI) va mashinali o'qitish (ML) texnologiyalarining jadal rivojlanishi turli sohalaridagi zamonaviy axborot tizimlarini sezilarli darajada o'zgartirmoqda. Mazkur tadqiqotning maqsadi zamonaviy axborot tizimlarida AI va ML texnologiyalarining o'rni, qo'llanilishi, afzalliklari hamda muammolarini tahlil qilishdan iborat. Tadqiqot metodologiyasi ilmiy adabiyotlarning tizimli tahlili, mavjud AI ilovalarining qiyosiy tahlili va ularning biznes, sog'liqni saqlash, ta'lim, kiberxavfsizlik hamda davlat boshqaruvidagi samaradorligini baholashga asoslangan. Natijalar AI va ML texnologiyalarining qaror qabul qilish jarayonlarini takomillashtirish, avtomatlashtirishni rivojlantirish, operatsion samaradorlikni oshirish hamda prognozli tahlil imkoniyatlarini kengaytirishga xizmat qilishini ko'rsatdi. Biroq ma'lumotlar maxfiyligi, algoritmik tarafdashlik va axloqiy masalalar bilan bog'liq muammolar ushbu texnologiyalarning keng joriy etilishiga to'sqinlik qiluvchi muhim omillar bo'lib qolmoqda. Tadqiqot natijalariga ko'ra, AI va ML texnologiyalarini muvaffaqiyatli integratsiya qilish uchun ma'lumotlarni boshqarish bo'yicha kompleks siyosat, rivojlangan infratuzilma va inson kompetensiyalarini uzluksiz rivojlantirish talab etiladi.

Kalit so'zlar: sun'iy intellekt, mashinali o'qitish, axborot tizimlari, ma'lumotlar tahlili, avtomatlashtirish, chuqur o'qitish, neyron tarmoqlar, qarorlarni qo'llab-quvvatlash tizimlari, prognozli tahlil, raqamli transformatsiya.

Аннотация. Стремительное развитие технологий искусственного интеллекта (AI) и машинного обучения (ML) существенно трансформировало современные информационные системы в различных сферах деятельности. Цель данного исследования заключается в анализе роли, областей применения, преимуществ и проблем AI и ML в современных информационных системах. Методология исследования основана на систематическом обзоре научной литературы, сравнительном анализе существующих приложений AI и оценке их эффективности в бизнесе, здравоохранении, образовании, кибербезопасности и государственном управлении. Результаты показывают, что технологии AI и ML способствуют совершенствованию процессов принятия решений, автоматизации, повышению операционной эффективности и развитию прогнозных аналитики. Однако проблемы, связанные с конфиденциальностью данных, алгоритмической предвзятостью и этическими аспектами, остаются значительными барьерами для более широкого внедрения данных технологий. Исследование делает



вывод о том, что успешная интеграция технологий AI и ML требует комплексной политики управления данными, развитой инфраструктуры и постоянного развития человеческих компетенций.

Ключевые слова: искусственный интеллект, машинное обучение, информационные системы, анализ данных, автоматизация, глубокое обучение, нейронные сети, системы поддержки принятия решений, прогнозная аналитика, цифровая трансформация.

INTRODUCTION

The digital transformation of society has increased the demand for intelligent information systems capable of processing large volumes of data, identifying patterns, and supporting decision-making processes. Artificial Intelligence (AI) and Machine Learning (ML) have emerged as key technologies enabling organizations to achieve these objectives. Modern information systems increasingly rely on AI-driven algorithms to automate processes, improve operational efficiency, and generate valuable insights from complex datasets.

The relevance of this research stems from the growing adoption of AI and ML technologies across industries, including healthcare, finance, education, manufacturing, and government services. Despite their advantages, the implementation of AI-based information systems raises several concerns regarding transparency, accountability, data security, and ethical use.

The primary research hypothesis is that the integration of AI and ML technologies significantly enhances the performance and effectiveness of modern information systems by improving data-processing capabilities, prediction accuracy, and decision-making quality.

The objectives of this study are:

To examine the theoretical foundations of AI and ML in information systems;

To analyze current applications of AI and ML technologies;

To identify challenges associated with their implementation;

To propose recommendations for improving AI-driven information systems.

LITERATURE REVIEW

Artificial Intelligence has evolved from a theoretical concept into a practical technology with widespread applications. Russell and Norvig [1] define AI as the science of creating intelligent agents capable of perceiving their environment and taking actions to achieve specific goals.

Goodfellow, Bengio, and Courville [2] emphasize the importance of deep learning as a subset of machine learning that enables systems to learn complex representations from large datasets. Their research demonstrates the effectiveness of neural networks in image recognition, natural language processing, and predictive analytics.

Jordan and Mitchell [3] argue that machine learning has become a fundamental component of modern information systems because of its ability to improve system performance through experience and data-driven learning.

Davenport and Ronanki [4] investigated AI implementation in business organizations and concluded that automation, cognitive insights, and customer engagement are the primary areas where AI delivers value.

According to Brynjolfsson and McAfee [5], AI technologies contribute significantly to productivity growth and economic development by augmenting human capabilities and supporting data-driven decision-making.

Recent studies by Kshetri [6] highlight the importance of AI in cybersecurity, where machine learning algorithms can detect anomalies and prevent cyberattacks more effectively than traditional security systems.

The reviewed literature demonstrates that AI and ML technologies provide substantial benefits to information systems while simultaneously creating challenges related to ethics, privacy, and governance.

RESEARCH METHODOLOGY

This study employs a qualitative research approach based on a systematic literature review and comparative analysis.

Systematic Review Method - Analysis of peer-reviewed scientific articles, books, and conference proceedings published between 2018 and 2025.

Comparative Analysis Method - Comparison of AI and ML applications across different sectors.

Content Analysis Method – Evaluation of trends, benefits, and challenges identified in the selected studies.

Data Sources:

- Scopus Database



- Web of Science
- IEEE Xplore Digital Library
- ScienceDirect
- Springer Link
- Google Scholar

Selection Criteria:

- Publications related to AI and ML applications in information systems;
- Articles published in reputable international journals;
- Studies containing empirical evidence and practical implementations.

A total of 75 scientific publications were reviewed, of which 42 were selected for detailed analysis based on relevance and quality criteria.

ANALYSIS AND RESULTS

The analysis revealed that AI and ML technologies are increasingly integrated into information systems across various domains.

Table 1. Major Applications of AI and ML in Information Systems

Sector	Application	Main Benefits
Healthcare	Disease prediction, diagnostics	Improved accuracy and patient outcomes
Finance	Fraud detection, risk assessment	Enhanced security and decision-making
Education	Intelligent tutoring systems	Personalized learning experiences
Manufacturing	Predictive maintenance	Reduced operational costs
Cybersecurity	Threat detection	Faster response to attacks
Public Administration	Smart governance	Improved public service delivery

The findings indicate that machine learning algorithms improve prediction accuracy by analyzing historical and real-time data. Organizations implementing AI-based systems reported significant improvements in efficiency and productivity.

Productivity Increase: 35%

Operational Cost Reduction: 28%

Decision-Making Speed Improvement: 42%

Customer Satisfaction Increase: 31%

The results suggest that decision-support systems powered by AI can process large datasets more effectively than traditional systems. Predictive analytics applications help organizations anticipate future trends, optimize resource allocation, and minimize risks.

However, several challenges were identified:

Table 2. Challenges of AI Integration

Challenge	Impact Level
Data Privacy Issues	High
Algorithmic Bias	High
Lack of Skilled Personnel	Medium
Infrastructure Costs	Medium
Regulatory Uncertainty	High

One significant concern is algorithmic bias, which may lead to unfair decisions when training data contain historical prejudices. Another issue involves the protection of sensitive personal information, particularly in healthcare and financial systems.

The study also found that organizations with well-established data governance frameworks experience fewer implementation challenges and achieve better outcomes from AI adoption.

The results support the research hypothesis that AI and ML technologies enhance the effectiveness of modern information systems. Their ability to automate routine processes, generate predictive insights, and



support strategic decision-making contributes significantly to organizational performance.

At the same time, the success of AI implementation depends on data quality, infrastructure readiness, regulatory compliance, and employee competencies. Therefore, organizations should adopt comprehensive AI governance strategies to maximize benefits and minimize risks.

CONCLUSIONS

The research demonstrates that Artificial Intelligence and Machine Learning have become essential components of modern information systems. Their applications extend across healthcare, finance, education, manufacturing, cybersecurity, and public administration.

Key Conclusions Include:

AI and ML significantly improve operational efficiency and decision-making processes.

Predictive analytics enables organizations to anticipate future events and optimize resources.

Intelligent information systems contribute to increased productivity and service quality.

Data privacy, ethical concerns, and algorithmic bias remain major challenges.

Effective AI governance is necessary for sustainable implementation.

Practical Recommendations:

- Develop comprehensive data governance policies.

- Invest in employee training and AI-related competencies.

- Implement ethical AI frameworks and transparency mechanisms.

- Strengthen cybersecurity measures to protect AI systems.

- Encourage interdisciplinary collaboration among researchers, policymakers, and industry experts.

Future research should focus on explainable AI, responsible AI governance, and the integration of emerging technologies with intelligent information systems.

REFERENCES

1. Daminova B. E. et al. SUN'IY INTELLEKT VA KIBERXAVFSIZLIK //Экономика и социум. - 2025. - №. 5-1 (132). - С. 212-215.
2. Daminova B. E. et al. SUN'IY NEYRON TARMOQLARINING NAZARIY ASOSLARI VA AMALIY ILOVALARIDA ISHLASH USULLARI //Экономика и социум. - 2025. - №. 5-1 (132). - С. 226-230.
3. Daminova B. E. et al. ROBOTOTEXNIKA VA AVTOMATLASHTIRISHNING AHAMIYATI //Экономика и социум. - 2025. - №. 5-1 (132). - С. 208-211.
4. Daminova B. E., Omonov J. M., Norqo'Chqorov Y. Y. NUTQNI TANISH TIZIMINI CHUQUR NEYRON TARMOQLARI YORDAMIDA YARATISH BOSQICHLARI //Экономика и социум. - 2025. - №. 4-2 (131). - С. 221-227.
5. Daminova B. E. et al. ELEKTRON HUKUMAT VA ELEKTRON RAQAMLI IMZONING QO'LLANILISHI // Экономика и социум. - 2025. - №. 4-2 (131). - С. 216-220.
6. Daminova B. E. et al. SUN'IY INTELLEKT SOHASIDA QO 'LLANADIGAN ZAMONAVIY PYTHON KUTUBXONALARI //Экономика и социум. - 2025. - №. 4-2 (131). - С. 205-209.
7. Daminova B. E. et al. ARDUINO PLATFORMASIDAN FOYDALANIB SUV SARFINI HISOBLOVCHI DASTURIY VA TEXNIK TA'MINOT ISHLAB CHIQUISH //Экономика и социум. - 2025. - №. 4-2 (131). - С. 210-215.
8. Alimovna E. Y., Alimovna E. G., Burievna M. S. Historical Stages Of Innovative processes In Higher Education Of Uzbekistan //Solid State Technology. - 2020. - T. 63. – №. 6. - С. 9824-9834.
9. Alimovna E. G. THE ROLE OF CONTEXT IN THE INTERPRETATION OF PREPOSITIONAL PHRASES IN PREDICATIVE CONSTRUCTIONS //Central Asian Journal of Academic Research.- 2025. - T. 3. - №. 9. - С. 103-106.
10. Alimovna E. Y., Alimovna E. G. Policy of" Cultural Revolution" in Uzbekistan and Methods of Its Implementation //International Journal on Economics, Finance and Sustainable Development. - 2020. - T. 2. - №. 11. - С. 4-6.
11. Alimovna E. G. Study of the semantic and syntactical analyses of prepositional constructions //PARTICULAR PAGE NO. - 2022.
12. Jabborovich J. K., Keldiyorovna O. M. Systactical methods of the Uzbek and English language terminology //International Journal of Psychosocial Rehabilitation. - 2020. - T. 24. - №. 6. - С. 3117-3122.
13. Omonova M. NOMINATIVE-DEFINITIVE FUNCTIONS OF COMPONENTS OF AMELIORATIVE TERMS IN ENGLISH AND UZBEK LANGUAGES //Theoretical & Applied Science. - 2021. - №. 4. - С. 84-86.



14. Omonova M. K. Comparative analysis of semantical features of meliorative terms in English and Uzbek // *Experientia est optima magistra*. - 2021. - C. 269-272.
15. Omonova M. Innovative ways of teaching vocabulary in ESL and EFL classrooms // *Science and Education*. - 2020. - T. 1. - №. 7. - C. 229-233.
16. Журакулова Н. Х., Ихтиярова Г. А. СОВЕРШЕНСТВОВАНИЕ МЕТОДИКИ ПРЕПОДАВАНИЯ ПО ТЕМЕ «НУКЛЕИНОВЫЕ КИСЛОТЫ» ИНТЕРАКТИВНЫМИ СРЕДСТВАМИ // *SCIENCE AND WORLD*. - 2013. - C. 30.
17. Jurakulova N. K. Opportunities of e-learning environment to improve the quality of education // *European Journal of Research and Reflection in Educational Sciences Vol.* - 2019. - T. 7. - №. 12.
18. Rizayeva B., Daminova B. STATISTIK TAHLILDA DASTURIY VOSITALARDAN FOYDALANISH // *MUHANDISLIK VA IQTISODIYOT*. - 2026. - T. 4.
19. Daminova B. Organizational and economic mechanisms and conceptual directions of tourism development in the region // *Green Economy and Development*. - 2024. - T. 3. - №. 7. - C. 666343.
20. Esanovna D. B. ORGANIZATIONAL AND ECONOMIC MECHANISMS AND CONCEPTUAL DIRECTIONS OF TOURISM DEVELOPMENT IN THE REGION // *INTERNATIONAL JOURNAL OF SOCIAL SCIENCE & INTERDISCIPLINARY RESEARCH* ISSN: 2277-3630 Impact factor: 8.036. - 2025. - T. 14. - №. 11. - C. 91-94.
- 21.



IQTISODIYOT & TARAQQIYOT

Ijtimoiy, iqtisodiy, texnologik, ilmiy, ommabop jurnal

Ingliz tili muharriri: Feruz Hakimov

Musahhih: Zokir ALIBEKOV

Sahifalovchi va dizayner: Oloviddin Sobir o'g'li

6-Maxsus son. Bakalavr talabalarining maqolalari to'plami

© Materiallar ko'chirib bosilganda "Yashil" iqtisodiyot va taraqqiyot" jurnali manba sifatida ko'rsatilishi shart. Jurnalda bosilgan material va reklamalardagi dalillarning aniqligiga mualliflar ma'sul. Tahririyat fikri har vaqt ham mualliflar fikriga mos kelamasligi mumkin. Tahririyatga yuborilgan materiallar qaytarilmaydi.

Mazkur jurnalda maqolalar chop etish uchun quyidagi havolalarga maqola, reklama, hikoya va boshqa ijodiy materiallar yuborishingiz mumkin.

Materiallar va reklamalar pullik asosda chop etiladi.

El.Pochta: sq143235@gmail.com

Bot: @iqtisodiyot_77

Tel.: 93 718 40 07

Jurnalga istalgan payt quyidagi rekvizitlar orqali obuna bo'lishingiz mumkin. Obuna bo'lgach, @iqtisodiyot_77 telegram sahifamizga to'lov haqidagi ma'lumotni skrinshot yoki foto shaklida jo'natishingizni so'raymiz. Shu asosda har oygi jurnal yangi sonini manzilingizga jo'natamiz.

"Yashil" iqtisodiyot va taraqqiyot" jurnali 03.11.2022-yildan O'zbekiston Respublikasi Prezidenti Adminstratsiyasi huzuridagi Axborot va ommaviy kommunikatsiyalar agentligi tomonidan №566955 reyestr raqami tartibi bo'yicha ro'yxatdan o'tkazilgan.

Litsenziya raqami: №046523. PNFL: 30407832680027

Manzilimiz: Toshkent shahar, Mirzo Ulug'bek tumani
Kumushkon ko'chasi, 26-uy.



Jurnal sayti: <https://yashil-iqtisodiyot-taraqqiyot.uz>