UDC: 005+338.47:656

Martynovych N.
candidate of economic sciences,
associate professor
of the department of management and public administration,
State Tax University
Sundulov Ye.
higher education student, master's level,
2nd year of the specialty "Project Management",
State Tax University

DIRECTIONS OF ARTIFICIAL INTELLIGENCE APPLICATION IN TRANSPORT

The modern stage of transport infrastructure development is characterized by profound transformations associated with digitalization, automation, and the integration of intelligent management systems. Under these conditions, the implementation of artificial intelligence (AI) technologies becomes not only a tool for improving traffic efficiency but also a strategic direction in creating safe, environmentally friendly, and economically sustainable transport.

The use of AI enables traffic forecasting, real-time traffic flow management, accident reduction, fuel consumption optimization, and emission minimization. Therefore, the issue of introducing artificial intelligence into Ukraine's transport system is particularly relevant in the context of integration into the European transport space, the development of "smart" cities, and the implementation of national digital strategies.

Considering global experience, the summarized results presented below clearly show that AI serves as a key factor in modernizing the transport industry, developing innovative logistics solutions, and improving road safety levels, thus defining its priority position among future technologies. Consequently, the purpose of this study is to identify key directions for the use of AI in transport in Ukraine, taking into account global trends.

The theoretical basis for identifying areas of AI application in transport is formed by the research of S. Klyuev, A. Sihonin, and S. Tsymbal [3, pp. 80–86], who view intelligent transport systems as a set of interrelated technologies of automated control, monitoring, and data analytics. K. Belous and A. Belous [4, pp. 106–116] emphasize the role of artificial intelligence in improving the efficiency of investment decisions in the transport sector, ensuring logistics flow optimization and project outcome forecasting. In the course of developing the topic of AI implementation in public transport, which has been ongoing for the past three years, it has been found that scientists, specialists, and practitioners in this field often rely on international experience to shape their understanding of the subject and object of research, allowing them to identify the most effective practices for integrating artificial intelligence into transport infrastructure (Table 1).

Table 1

Summary of international projects on AI integration in transport

Country / Region	Project	Project Objective	Project Effect
USA	Sidewalk Labs (Alphabet), Waymo, AI for Traffic Management (IBM)	Automated urban traffic management and implementation of autonomous transport	Reduction of road congestion by up to 20% and improvement of traffic forecasting accuracy up to 85%
EU (Germany, France, Netherlands)	AI4Cities, MaaS (Mobility as a Service)	Use of artificial intelligence for the development of eco-friendly transport solutions	Reduction of CO_2 emissions by 15% and improvement of public transport efficiency
China	Baidu Apollo, Huawei Smart City Traffic, Alibaba City Brain	Formation of "smart" transport hub infrastructure	Optimization of traffic light operations to reduce congestion by up to 25% through real-time data analytics
Japan	Toyota Mobility Teammate Concept, Smart Transport Tokyo	Ensuring safe and autonomous mobility	Integration of artificial intelligence in Shinkansen trains to predict technical malfunctions
Singapore	Smart Nation Initiative	Full digitalization of the urban transport sector	AI-controlled traffic lights and online route forecasting systems
UAE (Dubai)	Dubai Autonomous Transport Strategy	Forecast: by 2030, a quarter of all transport vehicles will be autonomous	Implementation of pilot AI-based routes and intelligent navigation for public transport

Source: compiled by the authors based on [3, p. 82], [4, p. 111]

Thus, the results of summarizing international practices show that the use of artificial intelligence in the transport sector offers a wide range of advantages, including increased efficiency of urban traffic, reduced accident rates, and lower environmental impact.

In addition, it has been established that each country, adapting AI technologies to its own conditions, creates unique "smart mobility" models that combine infrastructural, digital, and analytical solutions. Considering this, it is possible to identify the key directions for using artificial intelligence in transport in Ukraine (Fig. 1).

1. Intelligent transport systems (ITS)	• Ensure traffic management in real-time
2. Autonomous transport	• Includes driverless vehicles, trains, and drones
3. Traffic forecasting and data analysis	• Based on machine learning models to prevent congestion
4. Intelligent logistics	• Promotes optimization of transport routes and cargo delivery
5. Safety and monitoring systems	• Use video analytics to prevent road accidents
6. Environmental monitoring	• Focus on controlling emission levels and improving energy efficiency of transport

Fig. 1. Directions for using AI in transport

Source: compiled by the authors based on [2]

The identified directions for the use of artificial intelligence in transport are of particular importance for Ukraine, as they reflect the strategic vector of the industry's development towards digital transformation. For science, they form the theoretical foundation for further research in the field of intelligent transport systems, automated monitoring, and data analytics. For practice, they outline specific solutions aimed at improving road safety, transport energy efficiency, and the environmental sustainability of urban environments. The implementation of these directions will contribute to harmonizing Ukraine's transport policy with European standards and accelerating the adoption of the "smart mobility" concept.

References

1. Artificial Intelligence in Transport Infrastructure: Warnings for Ukraine. URL: https://surl.li/ltajgn

2. Application of Artificial Intelligence: Areas, Examples, Advantages and Challenges. URL: https://surl.li/ukfmmm

3. Klyuev S. O., Sihonin A. Ye., Tsymbal S. V. Development of Intelligent Transport Systems. *Bulletin of Mechanical Engineering and Transport*. 2023. №. 2 (18). P. 80–86. DOI: https://doi.org/10.31649/2413-4503-2023-18-2-80-86

4. Belous K. V., Belous A. O. The Use of Artificial Intelligence to Forecast Investment Efficiency in the Transport Sector. *Development of Methods of Management and Economy in Transport*. 2025. №. 2 (91). P. 106–116. DOI: https://doi.org/10.31375/2226-1915-2025-2-106-116

CONTENTS

SECTION 1. PEDAGOGICAL SCIENCE 9

Благодаренко Л. Ю., Січкар Т. Г., Шут М. І.
ОРГАНІЗАЦІЯ ПРОФЕСІЙНОЇ ОРІЄНТАЦІЇ УЧНІВ НА ПРОФЕСІЇ ФІЗИКО-ТЕХНІЧНОЇ СПРЯМОВАНОСТІ В УМОВАХ ОСВІТНЬОГО ПРОЦЕСУ 9

Василенко С. Л., Благодаренко Л. Ю.
ВИКОРИСТАННЯ ЗМІСТУ КУРСУ ФІЗИКИ З МЕТОЮ ЗДІЙСНЕННЯ ПРОФЕСІЙНОЇ ОРІЄНТАЦІЇ УЧНІВ 12

Євтушенко І. А., Благодаренко Л. Ю.
СИСТЕМНЕ ЗАСВОЄННЯ ОСНОВНИХ ТЕОРІЙ ФІЗИКИ ЯК ОСНОВА ФОРМУВАННЯ НАУКОВОГО СВІТОГЛЯДУ 15

Єсипов О. В., Благодаренко Л. Ю.
АКТИВІЗАЦІЯ МОТИВАЦІЙНИХ МЕХАНІЗМІВ В УЧНІВ ПРИ ВИВЧЕННІ ФІЗИКИ 17

Зайченко Н. І.
ПРО ДЕКОТРІ ПЕДАГОГІЧНІ РОБОТИ МАНУЕЛЯ РОДРИГЕСА-НАВАСА 19

Маценко Л. М.
ДО ПИТАННЯ ВИХОВНОЇ РОБОТИ НАСТАВНИКА В УМОВАХ ВІЙНИ 21

Серкова І. О., Шут М. І.
ОСОБЛИВОСТІ ВИВЧЕННЯ МЕХАНІЧНИХ КОЛИВАНЬ ТА ХВИЛЬ В ЗАКЛАДАХ СЕРЕДНЬОЇ ОСВІТИ 23

Sivkovych H. M., Diakun M. Ya.
TEACHING PROFESSIONAL ORIENTED VOCABULARY IN ENGLISH CLASSES TO STUDENTS MAJORING IN FORESTRY 25

Шевченко С. М.
ПАТРІОТИЧНЕ ВИХОВАННЯ В ШКОЛАХ УКРАЇНИ У ПЕРІОД З 1991–2004 РОКІВ 28

SECTION 2. EDUCATION (PRESCHOOL, PRIMARY, SECONDARY, VOCATIONAL AND SPECIAL EDUCATION) 31

Бриндзя І. В., Перегінець І. В.
АНАЛІЗ ПРЕДМЕТНИХ КОМПЕТЕНТНОСТЕЙ КУРСУ "ПІЗНАЄМО ПРИРОДУ" 31

Левіщенко О. С., Дзюба О. М.
ОСОБЛИВОСТІ ЕКОНОМІЧНОЇ ОЦІНКИ УПРАВЛІНСЬКИХ РІШЕНЬ В УМОВАХ ЦИФРОВІЗАЦІЇ ЕКОНОМІКИ 78

Ляшенко В. І., Іванов С. В., Землянкін А. І.
ДОРОЖНЯ КАРТА НЕОІНДУСТРІАЛЬНОЇ ТРАНСФОРМАЦІЇ РЕГІОНІВ УКРАЇНИ 81

Martynovych N., Sundulov Ye.
DIRECTIONS OF ARTIFICIAL INTELLIGENCE APPLICATION IN TRANSPORT 85

Shylo A.
DIRECTIONS FOR OVERCOMING BARRIERS TO DIGITAL TRANSFORMATION OF SMALL AND MEDIUM-SIZED BUSINESSES IN THE TERRITORIES 88

Щитовська Б. В., Олійник Т. І.
ТЕОРЕТИЧНІ ЗАСАДИ ТА СУЧАСНІ ТЕНДЕНЦІЇ РОЗВИТКУ ГЛОБАЛЬНОГО РИНКУ СОНЯЧНОЇ ЕНЕРГЕТИКИ 90

SECTION 7. FINANCE, ACCOUNTING, BANKING, INSURANCE 93

Rudevska V. I., Dmytruk M. A.
EVOLVING FRAMEWORKS OF FINANCIAL STABILITY: ADAPTIVE REGULATION IN THE AGE OF GLOBAL UNCERTAINTY 93

SECTION 8. MANAGEMENT, MARKETING, ENTREPRENEURSHIP AND TRADE 97

Костюк М. С.
СТРАТЕГІЇ СТІЙКОСТІ: БІЗНЕС В УМОВАХ ГЛОБАЛЬНОЇ КРИЗИ 97

Сапожніков Н. М.
ІННОВАЦІЙНІ ТА АДАПТИВНІ МОДЕЛІ РОЗВИТКУ ПІДПРИЄМСТВ В СУЧАСНИХ ЕКОНОМІЧНИХ УМОВАХ 99

SECTION 9. INTERNATIONAL RELATIONS AND GEOPOLITICS 101

Гольцов А. Г.
СТАНОВЛЕННЯ ТА РОЗВИТОК УКРАЇНСЬКОЇ ГЕОПОЛІТИЧНОЇ ДУМКИ НАПРИКІНЦІ XIX – НА ПОЧАТКУ XX СТОЛІТТЯ 101

Примушко Д. Ю., Губицький Л. В.
КИТАЙСЬКО-РОСІЙСЬКІ ВІДНОСИНИ 1991-2013 РР 104

ICSSH

INTERNATIONAL SCIENTIFIC AND PRACTICAL CONFERENCE

SCIENCE, EDUCATION, AND SOCIETY IN THE DIGITAL AGE OF GLOBALIZATION: SYNERGY FOR THE FUTURE

Book of abstracts



October 25, 2025

Seattle,
USA

INTERNATIONAL SCIENTIFIC AND PRACTICAL CONFERENCE

SCIENCE, EDUCATION, AND SOCIETY IN THE DIGITAL AGE OF GLOBALIZATION: SYNERGY FOR THE FUTURE

Book of abstracts

October 25, 2025

Seattle,
USA

UDC 37:082.2(06)

ISBN 978-1-968285-32-6

International Scientific and Practical Conference "Science, Education, and Society in the Digital Age of Globalization: Synergy for the Future": Conference Proceedings (Seattle, USA, October 25, 2025). Seattle, USA: Golden Quill Publishing, 2025. 148 pages.

This collection of abstracts includes the submissions of participants of the International Scientific and Practical Conference "Science, Education, and Society in the Digital Age of Globalization: Synergy for the Future":

Bohdan Khmelnytsky National University of Cherkasy
Danylo Halytsky Lviv National Medical University
Dragomanov Ukrainian State University
Drohobych Ivan Franko State Pedagogical University
Gymnasium No. 4 of Kyiv, Ukraine
H. S. Skovoroda Kharkiv National Pedagogical University
Institute of Industrial Economics of National academy of sciences of Ukraine
Institute of Pedagogy of National Academy of Educational Sciences of Ukraine
Ivano-Frankivsk National Medical University
Kremenets Forestry Technical Applied College
Kyiv National University of Technologies and Design
Lesya Ukrainka Volyn National University
Lutsk National Technical University
Mukachevo State University
National Academy of Sciences of Ukraine
National Scientific Center "Institute of Agrarian Economics"
National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute"
National Transport University
National University of Life and Environmental Sciences of Ukraine
O. M. Beketov National University of Urban Economy in Kharkiv
Oles Honchar Dnipro National University
Private Higher Educational Institution "Kyiv University of Culture"
Rivne State University of the Humanities
Sofiyivsko-Borschagivsky Lyceum
State Higher Education Establishment "Donetsk National Technical University"
State Tax University
State University of Trade and Economics
T. H. Shevchenko National University "Chernihiv Colehium"
Taras Shevchenko National University of Kyiv
Ternopil Volodymyr Hnatiuk National Pedagogical University
Ukrainian State University of Science and Technologies
Vasyl Stefanyk Carpathian National University
Vinnytsia National Technical University
Zhytomyr Ivan Franko State University

© Автори тез, 2025
© Golden Quill Publishing, 2025
© Center for financial-economic research, 2025
© International Center of Social Sciences and Humanities, 2025
Official website: http://www.economics.in.ua

BOOK OF ABSTRACTS

SCIENCE, EDUCATION, AND SOCIETY IN THE DIGITAL AGE OF GLOBALIZATION: SYNERGY FOR THE FUTURE
MATERIALS OF THE INTERNATIONAL SCIENTIFIC AND PRACTICAL CONFERENCE

October 25, 2025
Seattle, USA

Languages of the published abstracts:
English, Ukrainian, and other languages.

Editor-in-Chief: Ward A.
Technical editor: Butler V.
Artistic editor: Vasquez K.
Corrector: Jordan A.
Typesetting and Editorial: Vargas D.
Graphic Designer: Crawford J.

Passed for publication: 25.10.2025
Electronic edition. Typeface: Arial
Golden Quill Publishing
Seattle, WA 98101, USA

All rights reserved.

The authors are responsible for the content of their abstracts.

The editorial board does not necessarily share the views expressed by the authors.

Official website: http://www.economics.in.ua