# 29TH FAI INTERNATIONAL CONFERENCE
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## Abstract Proceedings

LET'S TALK ABOUT

GLOBAL ISSUES IN MULTIDISCIPLINARY RESEARCH FOR A DIGITAL FUTURE

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**FORUM FOR ADVANCED TRAINING IN EDUCATION AND RESEARCH ACADEMY OF INDIA (FAI)**

# 16TH TO 18TH FEB
## IN HYBRID MODE

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A deep dive into claims data underscores its often-overlooked significance in healthcare innovation. Claims analytics play a pivotal role in fraud detection, financial sustainability, and linking reimbursement data to clinical outcomes. Practical examples illustrate how machine learning models prevent fraudulent billing, real-time dashboards reduce claim denials, and claims-linked insights enhance preventative care for chronic conditions like diabetes.

Beyond claims, data science continues to reshape drug discovery, diagnostics, and patient engagement. AI expedites clinical trials, deep learning refines medical imaging, and wearable technology fosters proactive health monitoring. However, challenges such as data silos, ethical considerations, and interoperability remain, underscoring the need for human oversight and seamless data integration.

# GLOBAL CHALLENGES AND PROSPECTS FOR FISHERIES IN THE CONTEXT OF DIGITAL TRANSFORMATION

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Today, there are indeed many global problems. We have every reason to speak about the problem number one – overcoming poverty and ensuring food security. In India and Ukraine, both sectors – fisheries and aquaculture – play an important role in ensuring economic development. A significant part of the production consists of shrimp farming, in particular the species Penaeus vannamei, which is the country's main export product. By expanding aquaculture farms in states such as Andhra Pradesh, Gujarat, Odisha and West Bengal, India plans to increase its share of the global shrimp market to 25 %. India is one of the leading exporters of fish and seafood to the European Union. According to the Food and Agriculture Organization of the United Nations (FAO), in 2020, global exports of fish products from India reached 151 billion US dollars. Moreover, India is among the ten largest exporters, accounts for about 4 % of the total export value. The main products that India supplies to European markets are shrimp, squid, cuttlefish and various types of fish. In particular, shrimps account for a significant share of exports, due to high demand for this product in the European Union countries. India exports not only shrimps to the European Union, but also other seafood. For example, in 2022, India exported various types of shellfish to Spain, including live, fresh, chilled, dried, salted and pickled, which brought in over 800 million euros in revenue. .

Thus, according to FAO, India is the second largest aquaculture producer in the world. India is second only to China. It is evident that the question of improving the process of forming and summarizing reliable information regarding the production of fishery products becomes increasingly relevant. By this, we mean both fish stocking material and commercial fish. In this context, we observe that aquaculture is the most attractive sphere of activity, even worldwide, in ensuring food security despite its lengthy production process. Exactly these circumstances that led us to prepare materials for the order of the Ministry of Agrarian Policy, which approved the Reporting form 1A-Fish "Production of aquaculture products" and Instructions for filling it out. The new form became an administrative reporting form, unlike form 1A-Fish "Fish catch, harvesting of other aquaculture products", which was statistical. Therefore, all legal entities, individual entrepreneurs involved in fish production under aquaculture conditions

began reporting using this form. However, further our researches provided grounds to assert that filling out Form 1A-Fish without appropriate primary documents is difficult. These aspects necessitated the improvement of primary accounting at all stages of the production-technological process in fish farms. And we succeeded, we did it. For this aim, proposals were made and specialized forms of primary documentation were proposed for subjects of fish farming in aquaculture. These forms include accounting entries as well. The forms were developed in accordance with theoretical and methodological approaches of the formation of consolidated information by enterprises, taking into account the requirements established by accounting regulations (standard). 30 "Biological Assets", as well as in accordance with Article 9 of the Law of Ukraine "On Fisheries, Industrial Fishing, and the Protection of Aquatic Biological Resources", which discusses the introduction of forms of primary documentation in the fisheries industry in accordance with international standards and norms. A logical extension of the problem solution is the ability to documenting the processes of caviar incubation larvae during formation of the broodstock we can keep records of feed and fertilizer consumption keep records of stocking and catching of ponds, cages, pools and other water bodies. And most importantly, we can document the losses incurred in the process of economic activity. This also includes damage from feathered enemies, or in other words, from birds that eat fish and cause damage to producers. The analysis leads to the conclusion that the introduction of unified specialized forms of primary documentation for fish farming enterprises helps to ensure proper accounting at all stages of the production process. They were published as an Album and provided to all enterprises in the industry. Therefore, we have every reason to conclude that should continue paying, especially in promising sectors of the economy.

It is crucial, amidst the deepening global processes, to understand the opportunities and potential challenges posed by international integration processes to ensure effective accounting processes in the fishing industry within the framework of the adopted Strategy for the Digital Development of Innovative Activity of Ukraine for the period until 2030. Now, I would like to return to the question of what we can propose. We have submitted proposals for the establishment of a unified state electronic management system for the fishing industry called eFish, as an element of the digitalization of the industry.

A number of digital tools and digital solutions have been introduced to combat corruption and the shadow fish market. The Unified State Electronic System for Fisheries Management (eFish) is a component of the deregulation and digitalization of the fisheries industry. Using (eFish), producers can receive government services and permits online. Currently, through the Unified State Electronic System for Fisheries Management (eFish), the following have been implemented: electronic auctions for commercial fish catch - a transparent and competitive mechanism for distributing state resources (fish and other aquatic bioresources). This mechanism promotes fair competition between commercial fishermen, and also provides an opportunity for new participants to join the fishing business. During 2024, 308 auctions were held. The cost of lots increased by 34% - from UAH 38.15 million to UAH 50.9 million. Fishermen paid UAH 49.6 million to local budgets under concluded contracts. Before the reform, the amount of revenues for special use was UAH 13-15 million per year.

But today we have to discuss positive practices in the context of digitalization and the application of artificial intelligence technologies. For example, fish farms currently experience problems and economic losses due to predation by birds that eat fish, molluscs and crustaceans. Bird predation of fish in ponds and the transmission of diseases can lead to financial losses of up to 30%. Direct damage is associated with the direct destruction of fish or their damage to

such an extent that they become unfit for sale on the market. This threatens the stability of such an important food source as fish, molluscs and crustaceans. Indirect damage from birds has a wider range of manifestations and includes: non-lethal damage to fish, chronic stress, which leads to deterioration of health and reduced feed efficiency, as well as the spread of pathogens. In addition, piscivorous birds can cause mechanical damage to cages, fish fences, which leads to the escape of fish, shrimp, from such devices.

Using a unique, bird-friendly technology, fish ponds can be protected without disturbing the ecological balance, ensuring harmonious coexistence. This solution is effective, economically beneficial and environmentally responsible. So, the main innovation lies in the AI-based platform that analyzes bird behavior to continuously optimize strategies for scaring them away. It is possible to ensure compliance of fish business management with international norms and requirements by using technologies to automatically track their implementation when using elements of an artificial intelligence in the fish business.
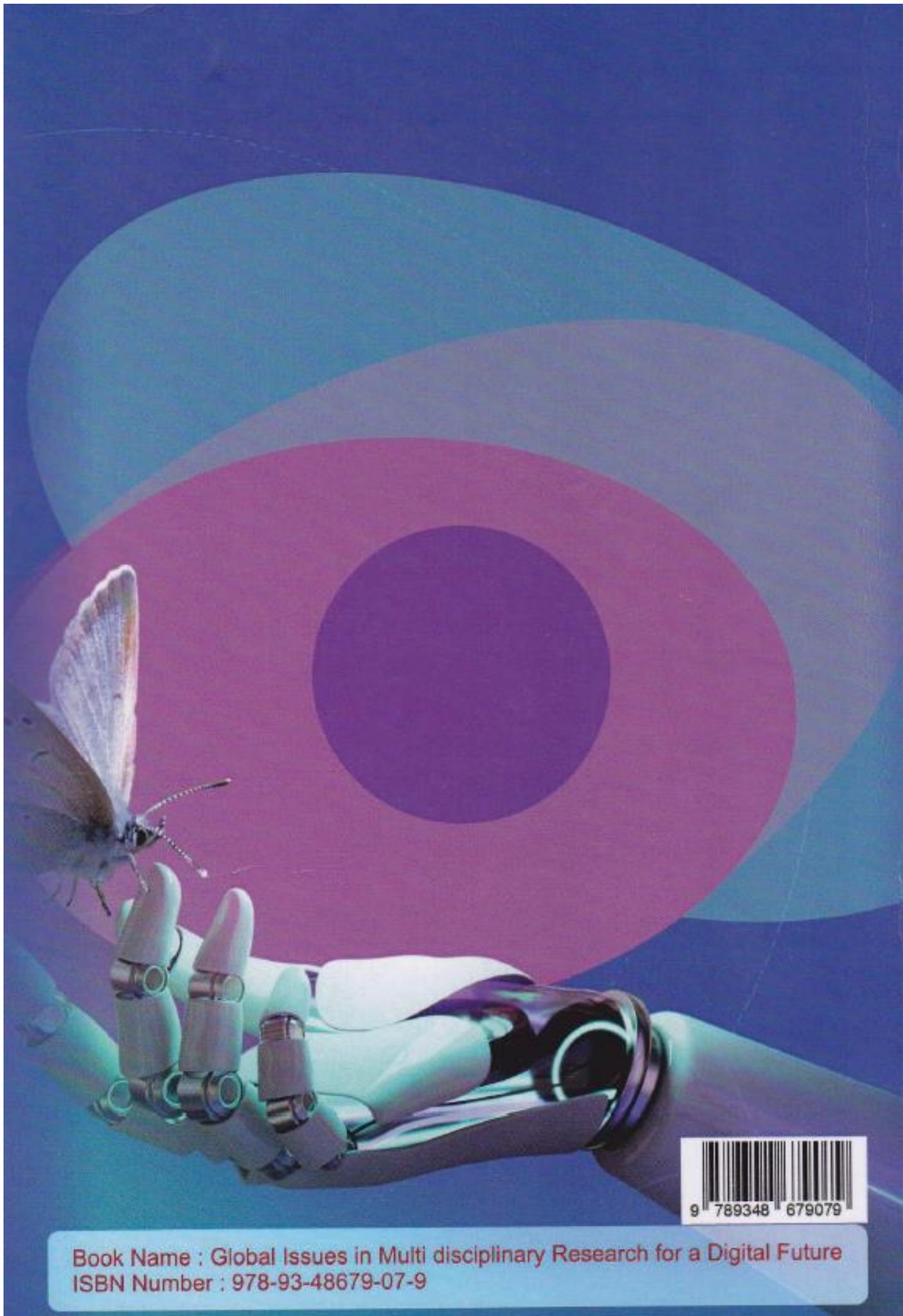
Looking ahead, the future of healthcare data analytics promises innovations like AI-driven claims approvals, predictive supply chain management, and global health applications. By leveraging data as the connective tissue of healthcare, we can drive smarter decision-making, optimize resources, and ultimately improve patient outcomes.

# Performance of a dual service station in a stochastic inventory system

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This paper considers a stochastic queueing-inventory system with dual service stations, two groups of heterogeneous multi-servers, two finite waiting halls, and two classes of customers. Station-1 and station-2 provide an inventory sales service and feedback service, respectively. The feedback service option can be given to customers at the service completion epoch. If a customer requires feedback service, moves to an orbit; otherwise, leaves the system permanently. A stochastic queueing-inventory system with two classes of customers, two groups of heterogeneous multi-servers, two finite waiting rooms, and dual service stations is examined in this article. An inventory sales service and a feedback service are offered by stations 1 and 2, respectively. Customers may be offered the feedback service choice at the service completion era. A consumer enters an orbit if they need feedback service; if not, they exit the system permanently. The classical retrial policy is applied to get feedback service. For the replenishment process, the system follows an $(S - 1, S)$ base stock ordering policy. This study analyzes the model under four classifications: 1) orbit size is finite and servers have homogeneous service rate; 2) orbit size is finite and servers have heterogeneous service rate; 3) orbit size is infinite and servers have homogeneous service rate; and 4) orbit size is infinite and servers have heterogeneous service rate. The steady-state probability vector for an infinite-size orbit case is computed using the Neuts and Rao truncation method. An expected total cost function is derived with sufficient system indicators for the four classifications.