

## Isfahan Artificial Intelligent 2024 Competitions

After the establishment and successful holding of the first Isfahan Artificial Intelligence (IAI) event in 2023,<sup>[1]</sup> the second event (IAI 2024) was held from October 23, 2024, to October 25, 2024, in Isfahan<sup>[2]</sup> [Figure 1].

The event was held in four sections as follows:

1. Artificial intelligence (AI) Forum with the participation of over 200 representatives from AI product-based companies and more than 300 AI experts from across the country
2. Exhibition of the Latest AI Capabilities (170 companies with AI products registered for the exhibition, out of which the top 100 companies were selected to present their product)
3. AI Investment Event with the presence of large companies to present their AI requirements, along with presenting the companies' capabilities in the field of AI (Pitch/Reverse Pitch)
4. AI Competitions (179 teams participated in 5 competitions based on real-world data).

The 2<sup>nd</sup> IAI Competitions launched in August of 2024 and aimed to provide innovative solutions derived from AI

tools for better analysis, diagnosis, and decision-making based on real data and real-world problems. The topics of the challenges were:

1. Challenge I: Prediction of respiratory apnea from tracheal sounds
2. Challenge II: Diagnosis of MS from magnetic resonance imaging images
3. Challenge III: Predicting the amount of sperm DNA damage using combined or independent analysis of sperm parameters or men's age
4. Challenge IV: Identification of encroachment on river boundaries using remote sensing data analysis
5. Challenge V: Identification of Micro-Crack defects in EL test images of solar panels.

Similar to the established rules for IAI 2023<sup>[1]</sup> and over around 4-month period, the teams (composed of university faculty members, students, and knowledge-based startups) utilized their AI tools based on training data and presented their initial results based on the test data for initial evaluation by technical committees of each challenge. According to the technical committees' assessments, 15 teams from 5 challenges (challenge I: 3 teams, challenge II: 5 teams, challenge III: 2 teams, challenge IV: 2 teams, and challenge V: 3 teams) were selected to present their results and achievements in the final round of competitions which was held in-person in the Soroush Hal of Isfahan Science and Technology Town on October 24, 2024 [Figure 2], and



Figure 1: Posters and pictures of several events in Isfahan Artificial Intelligence 2024



Figure 2: Several photos from the final round and closing ceremony of Isfahan Artificial Intelligence 2024 competitions

the competitions' steering committee ranked all teams based on their technical contribution, their results on initial and final test data, their submitted report, and their presentation.

The January 2026 issue of JMSS is dedicated to the results of the final rounds of IAI 2024 competitions in the challenges I and II which are based on publicly available dataset from conducted researches in Isfahan University of Medical Sciences.<sup>[3]</sup>

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**Submitted:** 12-Dec-2025      **Revised:** 18-Dec-2025  
**Accepted:** 23-Dec-2025      **Published:** 02-Jan-2026

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<b>Quick Response Code:</b>	<b>Website:</b> www.jmssjournal.net
	<b>DOI:</b> 10.4103/jmss.jmss_135_25

**How to cite this article:** Rabbani H. Isfahan artificial intelligent 2024 competitions. *J Med Sign Sens* 2026;16:1.