Preface to JAISE 18(1)

Journal of Ambient Intelligence and Smart Environments
2026, Vol. 18(1) 3–4

DOI: 10.1177/18761364261416529
journals.sagepub.com/home/ais

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This issue

This regular issue of JAISE is composed of nine articles. The review process for the manuscripts in this issue was supervised by our editors: Filippo Palumbo, Lukas Esterle, George Baryannis, Paula Lago, Andrés Muñoz, Jeannette Chin, Raquel Martínez and Lanyu Xu, whom we thank for their service. The first article in this issue is selected to be available free to read as editor's choice.

AmI refers to systems that use context-awareness to anticipate and adapt to human needs, creating environments that are responsive and user-centric. Smart buildings are technologically enhanced structures that utilize interconnected systems to improve occupant comfort, energy efficiency and decision-making capabilities. The paper Towards the integration of Ambient Intelligence in Smart Buildings: definitions and propositions, by Loris Plasson-Simoni et al., examines smart building concepts and proposes a classification scale inspired by autonomous vehicle standards, defining five levels of building intelligence, with AmI as a core component at the highest level. To enable such environments, semantic web technologies are employed to propose a model to transform sensor data into actionable information, enabling adaptive, real-time decision-making within buildings.

A digital twin is a computer system designed to monitor, simulate and predict various aspects of a specific physical object. Human digital twins (HDT) have emerged as an evolution of this concept, where the inherent complexity of human beings makes such an endeavour a challenging proposition. The paper Human Digital Twins – Principles and Challenges, by Julián Abellán et al., offers a systematic literature review aimed at clarifying the HDT concept and the different aspects a proper HDT should consider in its fields of application, including the underlying technological frameworks, as well as ethical and legal concerns related to HDT.

Collaborative robots (cobots) have revolutionized industrial automation by enabling seamless human–robot interaction in shared workspaces. The paper From Collaborative Robots to Internet of Cobots: Innovations, Applications, and Emerging Trends, by ZeashanHameed Khan et al., provides a review of the field while introducing the Internet of Cobots as an enabler of next-generation manufacturing systems, and describes key technological factors involved in sensing and control architectures, safety protocols, dynamic task allocation and learning algorithms that enable human-like adaptability.

Accurate assessment of electromechanical system status is essential for the safe and efficient management of airport energy stations, where pointer-meter readings serve as key operational indicators. The paper YOLO-METER: An efficient and accurate detection method of pointer meter in airport energy station, by Chunyong Feng et al., proposes a vision-based detection model tailored for retrofitting existing airport energy stations featuring background interference suppression and efficient multi-scale feature fusion.

Smart home automation serves as a preventive and protective approach to monitor and recognize human activities (HAR) in a nonintrusive manner using ambient intelligence. For multi-resident activity recognition, traditional models encounter challenges in feature engineering, resulting in suboptimal recognition rates. The paper CI2G: A Custom Inception Inspired GRU Model for Multi-Resident Activity Recognition in a Smart Home Environment, by P. Rajkumar et al., introduces a custom inception-inspired recurrent model designed for multi-resident activity recognition which incorporates various filters to optimize execution time and improve recognition rates, while demonstrating effective tackling the complexities of multi-resident activity recognition.

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Post-harvest storage of farming products such as tomatoes faces challenges due to the lack of intelligent infrastructure, resulting in high spoilage rates for low-income farmers. The paper A Dew Computing-based Smart Tomato Storage Monitoring Framework, by RohitKumar Kasera et al., proposes an IoT-based computing architecture for real-time monitoring, control and optimization of stored tomato shelf life in storage warehouses.

The concept of 'design for somebody' serves as a methodology framework focusing on modular, user-centred development for individuals with specific needs. The paper Exploring Smart Furniture's Experienced Benefits and Use Cases for End Users and Care Professionals, by Sari Merilampi et al., explores perceived benefits and use cases of three smart furniture prototypes, a smart chair, smart mirror and smart table, designed to support ageing-in-place and care delivery.

Aquaculture is a fast-growing food production sector, yet it lags behind other industries in adopting digital technologies, where challenges such as integrating multimodal data and maintaining reliable network connectivity have hindered the development of digital twins for monitoring aquaculture systems. The paper Edge-Enabled Distributed Digital Twins with Embedded Intelligence for Smart Aquaculture Systems, by Diogo Costa et al., addresses these challenges through proposing an edge-based architecture for digital twins which enables distributed, localized monitoring and actuation, reducing dependence on centralized systems and availability of robust networks.

There has been a growing demand for indoor positioning solutions in recent years due to the proliferation of applications that require the ability to track assets, people and goods indoors. Examples of such applications include asset tracking in warehouses and factories, navigation of visitors in museums and galleries, monitoring the flow of passengers in airports and stations, adapting promotional ads to the location of customers in supermarkets, etc. The paper Exploring the Fusion of Multi-Power Levels in RSSI-to-Image Transformation for Accurate Indoor Positioning with Deep Learning, by Ikbal Chammakhimsadaa et al., presents an indoor localization system leveraging Zigbee-based hardware for real-time positioning, employing a Received Signal Strength Indicator (RSSI)-to-image transformation, feature extraction using a pre-trained Convolutional Neural Network model, followed by clustering and classification.

Upcoming issues

The following is a list of upcoming issues of JAISE:

- May 2026: Thematic Issue on 'Urban Computing and Mobility Pattern Analysis'.
- August 2026: Regular Issue.
- November 2026: Thematic Issue on 'Human Factors in Decision-Making for Intelligent Environments and Applications'.

More information on the call for papers to the future issues is available on the webpage of JAISE at: https://journals.sagepub.com/home/AIS

Funding

The authors received no financial support for the research, authorship, and/or publication of this article.

Declaration of conflicting interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.