Information Processing at the Digital Age Journal

(Previously Revue de l'Information Scientifique et Technique)

Call for Papers: Special Issue on AI-Driven Advances in Information Retrieval and Recommendation Systems

As artificial intelligence (AI) continues to transform the landscape of information retrieval (IR) and recommender systems (RS), there is an increasing need to explore how emerging AI technologies can enhance their performance, scalability, and adaptability. This Special Issue, "AI-Driven Advances in Information Retrieval and Recommendation Systems," aims to highlight recent progress and innovative approaches that leverage cutting-edge AI techniques, such as Deep Learning, Large Language Models (LLMs), Explainable AI (XAI), and Generative AI (GAI), to advance retrieval and recommendation models across diverse domains.

We welcome original research papers that demonstrate the integration of these advanced AI technologies into IR and RS to improve ranking accuracy, personalization, interpretability, and robustness. Both theoretical contributions and applied studies that push the boundaries of intelligent information access are encouraged.

Topics of interest include, but are not limited to:

1. Foundation Models and Architectures:

- Deep learning architectures for IR and RS
- Large Language Models for retrieval and recommendation
- Neural ranking models and learning-to-rank with transformers
- Embedding techniques and vector databases for semantic search

2. Emerging AI Paradigms:

- Retrieval-Augmented Generation (RAG) systems and their optimization
- Generative AI for adaptive content generation and user modeling
- Fine-tuning and prompt engineering strategies for IR/RS applications
- Zero-shot and few-shot learning for cold-start problems
- Continual/lifelong learning in evolving retrieval and recommendation scenarios

3. Advanced Learning Approaches:

- Graph neural networks for recommendation and retrieval
- Reinforcement learning for interactive and sequential recommendation
- Contrastive learning and self-supervised methods for representation learning
- Federated learning for privacy-preserving recommendation

4. Interpretability and Knowledge Integration:

- Explainable AI for interpretable retrieval and recommendation

- Knowledge-enhanced retrieval and recommendation

5. Multimodal and Cross-Domain Systems:

- Multimodal and cross-domain information retrieval
- Multimedia content recommendation (video, audio, streaming)

6. Context and Personalization:

- Context-aware and POI recommendation systems
- Hybrid, personalized, and multi-criteria recommendation models
- Session-based and sequential recommendation
- Real-time personalization and online learning

7. Social and Collaborative Approaches:

- Social recommendation
- Group- and community-based recommendation approaches

8. User Interaction and Experience:

- Conversational information retrieval and recommendation
- Human-in-the-loop and interactive IR/RS
- User feedback integration and preference elicitation

9. Language and Cultural Diversity:

- Multilingual and Arabic information retrieval and recommendation
- Cross-lingual information retrieval and recommendation
- Low-resource language IR/RS
- Dialectal Arabic in retrieval and recommendation systems

10. Trust, Ethics, and Safety:

- Bias detection and mitigation in AI-driven IR/RS
- Fairness-aware recommendation algorithms
- Privacy-preserving retrieval and recommendation techniques
- Adversarial robustness and security in IR/RS systems
- Filter bubbles, echo chambers, and diversity-aware recommendations

11. Evaluation and Benchmarking:

- Evaluation frameworks for AI-driven IR and RS
- Beyond-accuracy metrics (diversity, novelty, serendipity, coverage)
- User-centric evaluation methodologies
- Reproducibility and standardization in IR/RS research
- A/B testing and online evaluation strategies

12. Domain-Specific Applications:

- Applications in e-learning, e-commerce, healthcare, and tourism
- News recommendation and misinformation detection
- Scientific literature retrieval and academic recommendation
- Legal and patent information retrieval
- Sustainability and energy-efficient IR/RS systems

This Special Issue particularly encourages contributions that demonstrate how new AI paradigms can improve the effectiveness, adaptability, and intelligence of IR and RS. Both empirical results and novel methodological frameworks are welcome.

Important Dates:

Manuscript Submission Deadline: April 30, 2026
Notification of First Review: June 15, 2026
Revised Manuscript Due: June 30, 2026
Final Decision Notification: July 31, 2026

Submission

https://asjp.cerist.dz/en/PresentationRevue/134

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