



## CALL FOR PAPERS FOR SPECIAL SESSION PROPOSAL

### SPECIAL SESSION 7

## Intelligence in motion: AI-driven innovations for global skeletal disorders and orthopedic care

### Session description :

This special session will provide an in-depth exploration of the practical integration of computational intelligence into musculoskeletal medicine to improve patient care. Maintaining skeletal health is vital for global mobility and quality of life. However, clinicians currently face heavy workloads due to high-volume trauma cases and the difficult management of chronic, rare, or structurally genetic conditions. We aim to show how AI-driven tools can evolve from simple automation to reliable clinical copilots.

This session covers the entire range of orthopedic care, including the rapid identification of subtle fractures in emergency departments, automated Cobb angle measurement for scoliosis, and long-term tracking of bone growth in genetic diseases. We invite researchers to present new work on joint degeneration in arthritis, improvements in surgical precision, and the use of advanced medical imaging to analyze complex skeletal pathologies.

### Session chairs :

- **Emna Aridhi**, Tunis El Manar Univ., TN
- **Ahmed Amine Mohsni**, Bechir Hamza Hospital for Children, TN
- **Ahlem Maghzaoui**, Tunis El Manar, TN
- **Kaouther Laabidi**, Jeddah Univ., KSA

### Topics of interest (not limited to) :

- Detection, classification, and automated reporting of bone fractures across all modalities (X-ray, CT, and MRI);
- Automated grading of osteoarthritis, cartilage health assessment, and joint inflammation monitoring;
- AI-driven diagnosis and longitudinal tracking of hereditary multiple exostoses, dysplasia, and rare bone tumors;
- AI-assisted preoperative planning for total joint arthroplasty and deformity correction;
- Automated scoliosis screening, vertebral segmentation, and Cobb angle measurement;
- Opportunistic screening for osteoporosis and vertebral fracture risk assessment using routine CT/X-ray scans;
- Bone age assessment;
- Explainable AI frameworks for improving clinician trust in orthopedic diagnostic tools.

### Important Dates



### Sponsors



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