



*Society for Imaging Science & Technology*  
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## **Journal of Imaging Science and Technology**

### **Call for Special Issue**

#### ***Medical Pattern Recognition Systems using Machine Intelligence***

##### **Summary**

As the fourth industrial revolution quickly reshapes the landscape of manufacturing industries, it is essential for researchers and industry practitioners to acquire fundamental understanding of the enabling technologies, including pattern recognition, machine learning, big data, multimodal data infusion, and autonomous real-time systems. More specifically, multimodal infusion algorithms using pattern recognition, computer vision and machine learning construct the technological backbone of the Industry-4.0 in developing autonomous solutions for user-friendly systems.

Medical images obtained from different modalities such as X-ray, MRI, CT, PET undergo image processing methods such as pre-processing, image enhancement, image segmentation, registration, restoration, and morphological processing to recognize patterns. These images are indispensable in assisting radiologists and clinicians to diagnose disease progression, staging, recursion, and severity. Rapid advancement in the medical imaging field to deepen understanding of pattern recognition systems and to develop better pattern recognition strategies has demonstrated unbridled potential of driving healthcare innovations, especially during the current Covid-19 pandemic. For example, pattern recognition technologies based on artificial intelligence and machine learning algorithms significantly enhance the efficiency of the emerging e-Health systems by integrating personalized information of each patient with evidence-based medical knowledge. Automated machine learning-based clinical diagnostic systems are developed to assist clinicians to make data-informed diagnosis in a timely manner, and ultimately improve accuracy and punctuality of the overall healthcare system.

This special issue will focus on advancements in healthcare pattern recognition systems for medical applications including basic and clinical decision support systems, industrial expert decision systems and so on. It also welcomes manuscripts on machine

learning and deep learning for biomedicine, intelligent and virtual diagnosis and treatment system, and other related topics on AI in healthcare and disease. We encourage submission of original research in these fields as well as high-quality literature reviews providing new insights.

## Topics

Topics for this special issue include but not limited to:

- Pattern recognition in healthcare systems
- Radiological and pathological images-based survival and disease severity prediction
- Pattern recognition methods to predict the physical dynamics
- Multiparametric approaches to predict the disease progression
- MRI, CT, and PET images-based prediction of tumor stages
- Feature extraction and selection techniques for high-efficient prediction
- Developing robust AI based predictive models in medical care and decision making
- Wearable biosensing and monitoring systems
- Laboratory pattern recognition systems for basic and pre-clinical research
- Pharmaceuticals industry applications using pattern recognition algorithms
- New imaging methods that enhance structural imaging, functional imaging
- New data acquisition and the subsequent analysis

## Submission and Review

Submission details can be found in the [JIST Author Guidelines](#). Each submission shall include a cover letter with author names, affiliations, and contact information including mailing addresses and e-mails. Prospective authors can submit complete manuscripts electronically via <https://jist.msubmit.net> by **January 15, 2022**. All submissions will be evaluated by at least two peer reviewers and selected based on their originality, significance and relevance to the field, technical rigor, and clarity of presentation.

## Important Dates

- **Submission deadline: January 15, 2022**

- First round author notification: March 15, 2022
- First round revision submission: April 15, 2022
- Second round author notification: May 01, 2022
- Second round revision submission: May 15, 2022
- **Final notification: May 31, 2022**
- Publication: July/August Issue in 2022

## **Guest Editors**

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