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<b>Department: Radio-Diagnosis</b>	<b>Category: Research&amp; innovation</b>

### TRANSCRIPT

**Hello everyone!!! This is Dr.A.Umamageswari, Professor and Head, department of Radiodiagnosis,SMVMCH.**

**Artificial intelligence, which will be referred as AI henceforth, is revolutionizing the medical field, particularly in radiology. Advanced techniques like deep learning have significantly impacted healthcare, with AI algorithms detecting complex anomalies in imaging data.**

#### So, what is AI in Radiology?

**Radiology generates extensive clinical image data, which radiologists spend hours sorting, writing analyses, and finalizing diagnoses. Computer vision, a specialized artificial intelligence field, can process and analyse these images to accurately predict diseases.**

**AI brings several benefits for Radiologists, which ease their work.**

**Some key benefits include:**

- **More Accurate Classifications**
- **Enhanced Analysis**
- **Generating 3D Models**
- **Quicker results**

#### What are the applications?

1. **Neurological Abnormalities - Artificial intelligence can detect brain disorders like Alzheimer's and Parkinson's using convolutional neural networks and deep learning techniques, enabling early diagnosis and treatment.**
2. **Classification of Brain Tumors - Brain tumor classification using MRI images and machine learning is faster and more accurate than traditional methods.**

**3. Detection of Breast Cancer - AI tools can enhance mammography examinations, potentially reducing human error and misdiagnosis in breast cancer detection**

**4. Radiation Dosage Optimization - Radiology requires exposure to radiation for proper imaging, which can be harmful to children. Artificial intelligence can enhance image resolution using upscaling models and synthetic data augmentation techniques, allowing for better image quality in radiology workflows.**

**What are the areas of concern?**

**Lack of standardization, explainability, validation datasets, and privacy breaches are some areas which needed to be looked into.**

**Are there any ethical issues?**

**Yes, AI in radiology is a field that requires ethical considerations. The European Society of Radiology emphasizes the importance of human-centric AI in radiology, ensuring equal benefits and harms. However, the use of AI in radiology can lead to misuse of patient records and biases. The public's willingness to accept imperfections in AI-driven healthcare remains a question.**


**What is the Future of AI in Radiology?**


**AI in healthcare is promising, with advancements in machine and deep learning algorithms being used for clinical research. Radiologists are adopting AI tools, but there is still a long way to go. Some routine tasks, such as human brain image segmentation, lesion detection, and error detection, can be automated.**

**Key Takeaways**

**Artificial intelligence techniques in medical imaging can aid radiologists in tasks like tumor classification and radiation dosage optimization. However, these techniques require private data and model interpretations to maintain trust and ensure the benefit of medical science.**

**Thank you**

  
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