



Sreenivasa Institute of Technology and Management Studies (SITAMS)
Murukambattu, Chittoor, Andhra Pradesh.

Department of Research and Development cell in association with
Department of Artificial Intelligence and Machine Learning

Workshop

On

“ML for Healthcare & Bio-medical Application”

A screenshot of a Zoom meeting. The main window displays a Microsoft Word document titled 'almg - Microsoft Word'. The document content is as follows:

Applications of AI

1. Healthcare: AI is being used in healthcare for **diagnosing diseases**, developing personalized treatment plans, and streamlining clinical workflows.
2. Finance: AI is being used in finance for detecting fraudulent transactions, predicting stock prices, and optimizing investment portfolios.
3. Transportation: AI is being used in transportation for developing self-driving cars, optimizing traffic flow, and improving logistics management.
4. Education: AI is being used in education for developing personalized learning plans, automating grading, and enhancing student engagement.

Benefits of AI

1. Increased Efficiency: AI can automate repetitive tasks, freeing up human resources for more strategic and creative work.
2. Improved Accuracy: AI can analyze vast amounts of data, identify patterns, and make predictions with a high degree of accuracy.

The status bar at the bottom of the Word window shows 'Page: 1 of 5' and 'Words: 2/901'. The Zoom interface includes a top bar with 'uma maheswari (Presenting)', a right-hand sidebar with participant avatars for 'uma maheswari', 'Deepika Reddy Deepu', 'Raghu V', 'vijaya kumar shanmugam', and another 'Raghu V', and a bottom toolbar with various meeting controls like mute, video, chat, and screen share.

uma maheswari (Presenting)

algn - Microsoft Word

Machine Learning (ML) has revolutionized the healthcare and biomedical industries by providing innovative solutions for diagnosis, treatment, and patient care. Here are some exciting applications of ML in healthcare and biomedicine:

Diagnosis and Detection

1. **Medical Imaging Analysis:** ML algorithms can analyze medical images (e.g., X-rays, CT scans, MRI) to detect abnormalities, such as tumors or fractures.
2. **Disease Diagnosis:** ML models can be trained to diagnose diseases based on patient symptoms, medical history, and test results.
3. **Cancer Detection:** ML algorithms can analyze genetic data, medical images, and clinical features to detect cancer at an early stage.

Personalized Medicine

1. **Genomic Analysis:** ML can help analyze genomic data to identify genetic variations associated with specific diseases or conditions.
2. **Precision Medicine:** ML models can be used to develop personalized treatment plans based on a patient's genetic profile, medical history, and lifestyle.

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uma maheswari
Deepika Reddy Deepu
Raghu V
vijaya kumar shanmugam
Raghu V

uma maheswari (Presenting)

algn - Microsoft Word

and treatment response.

2. **Decision Trees:** Used for classifying patients into different risk categories, predicting disease progression, and identifying treatment options.
3. **Random Forests:** Used for predicting patient outcomes, identifying high-risk patients, and selecting optimal treatment strategies.
4. **Support Vector Machines (SVMs):** Used for classifying patients into different disease categories, predicting treatment response, and identifying biomarkers.

Unsupervised Learning Algorithms

1. **K-Means Clustering:** Used for identifying patient subpopulations, clustering patients with similar characteristics, and identifying patterns in healthcare data.
2. **Hierarchical Clustering:** Used for identifying patient subpopulations, clustering patients with similar characteristics, and identifying patterns in healthcare data.
3. **Principal Component Analysis (PCA):** Used for reducing the dimensionality of healthcare data, identifying patterns, and visualizing high-dimensional data.

Deep Learning Algorithms

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uma maheswari
Deepika Reddy Deepu
vijaya kumar shanmugam
Raghu V
Raghu V

Introduction:

Machine learning for healthcare and bio-medical applications refers to the use of machine learning, natural language processing, robotics, and other ML technologies to improve patient care, streamline operations, and enhance clinical outcomes. ML is transforming the healthcare industry by automating routine tasks, assisting in diagnostics, and providing advanced decision-making tools for medical professionals. It helps in processing large volumes of data, uncovering patterns that humans might miss, and offering personalized treatment recommendations. The adoption of ML in healthcare is increasing rapidly, with the promise of enhancing the overall efficiency and accessibility of medical services. However, challenges such as data privacy concerns, regulatory hurdles, and the need for proper integration into existing healthcare systems remain.

Webinar Contents:

- Introduction to ML and Healthcare
- ML Applications in Healthcare
- Ethical Considerations
- Human-AI Collaboration
- Future of ML in Healthcare & bio-medical application

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Venue : Online

Target Audience : II Year AIML Students, SITAMS

Organized by : Department of CSE (AI&ML), SITAMS

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