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Review on: Introducing Recent Trends in ML

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ABSTRACT:

Technology is everything in the current generation. In that The trend of machine learning is going on. machine have made people's lives easier This research paper provides information on current trends and highlighting their potential impact on various domains. We discuss advancements in deep learning, transfer learning, reinforcement learning, and generative models, along with their applications in computer vision, natural language processing, healthcare, and autonomous systems. Additionally, we examine the challenges and ethical considerations associated with these trends, emphasizing the need for responsible development and deployment of ML technologies.

1.INTRODUCTION

Machine learning is a technique that allows computers to learn automatically from historical data. Resent emerging trends in ML is amazing. Like, it is being used for various tasks such as **image recognition, speech recognition, email filtering, Facebook auto-tagging, recommender system**, and many more. This paper aims to provide an overview of some of emerging trends of ML

2. DEEP LEARNING

Deep learning is a technology that teaches computers to work like the human brain. Complex models such as text, audio, and video can be guaranteed.

Recent trends in deep learning include the development of more powerful architectures, such as convolutional neural networks (CNNs) for computer vision and recurrent neural networks (RNNs) for sequential data.

Applications of deep learning in daily life.

1. Self-driving Cars
2. Sentiment Analysis
3. Virtual Assistant
4. Social Media
5. Healthcare

3. TRANSFER LEARNING

Transfer learning is the technique of Machine learning In which a model is trained for one task and then that task is use in the starting of second task.

This is useable when second task is similar to first task or we have limited data for second task.

Recent trends in transfer learning focus on pre-training large-scale models, such as BERT (Bidirectional Encoder Representations from Transformers).

Applications of transfer learning in daily life.

- 1.Real-World Simulations
2. Gaming
- 3.Image Classification

4. REINFORCEMENT LEARNING

A Reinforcement learning is a one type of feedback depends machine learning technique. Where agent learns to behave in an atmosphere by performing activity and seeing the pros of those activities.

Here agent can get two types of feedback

- 1) positive feedback
- 2) negative feedback

Feedback will ne get based on activity Agent use feedback to learn automatically without any labeled data.

Application of reinforcement leaning in daily life

1. Autonomous cars
2. Datacenters cooling
3. Traffic light control
4. Healthcare
5. Image processing
6. Robotics
7. NLP
8. Marketing
9. Gaming

5. GENERATIVE MODELS

The main target of generative model is to build new data samples that recreate a given dataset.

Recent trends in generative modeling include the introduction of generative adversarial networks (GANs), Variational Autoencoders (VAEs).

Application of generative model in daily life

1. Generate Examples for Image Datasets
2. Generate Cartoon Characters
3. Generate Realistic Photographs
4. Image-to-Image Translation
5. Text-to-Image Translation
6. Semantic-Image-to-Photo Translation
7. Face Frontal View Generation
8. Photos to Emojis
9. Photograph Editing
10. Video Prediction
11. 3D Object Generation

6. CONCLUSION

This research paper has provided an overview of the current trends in machine learning. Recent trends in Machine learning area like deep learning, transfer learning, Reinforcement Learning.

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