STUDENT NAME: ABIRAMI.B

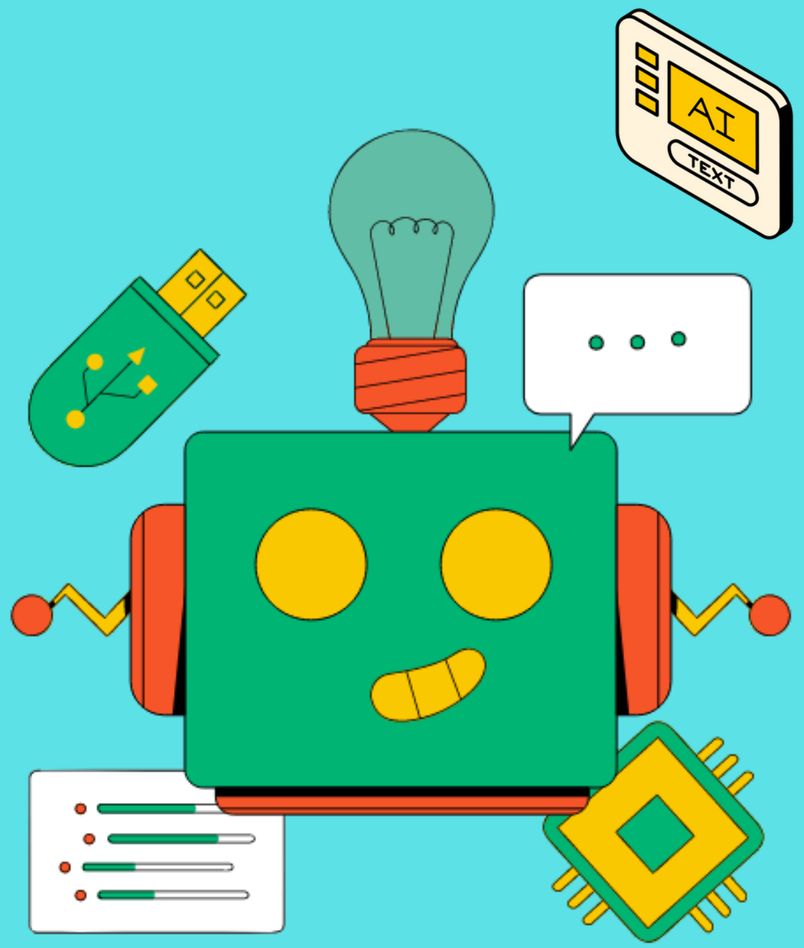
REG NO:ASTUV2292292 4U09003

NM ID:9896F048B5F83B5B8EC45022AAF4D91D

DEPARTMENT: BCA

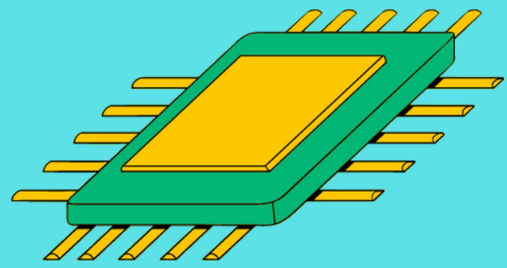
COLLEGE NAME: SRI BHARATHI WOMEN'S ARTS AND SCIENCE COLLEGE

UNIVERSITY: THIRUVALLUVAR UNIVERSITY



ARTIFICIAL INTELLIGENCE & MACHINE LEARNING

PRESENTATION



PRESENTATION OUTLINE

- Introduction
- What is Artifical Intelligence?
- Historical Context
- Key Concepts
- What is Machine Learning?
- Types of Machine Learning
- Role of Data in Machine Learning
- Case Studies
- Real World Applications
- Ethical Considerations
- Deployment and Integration
- screenshot and result
- Preparing for the Future

INTRODUCTION

Imagineaworldwhere machines can decipher languages, recognize faces, diagnose diseases, and even make predictions without explicit programming.

We will embark on a journey through the ever-evolving landscape of Artificial Intelligence and Machine Learning. We'll explore the core concepts, real-world applications, and the transformative potential of these technologies.

WHAT IS ARTIFICIAL INTELLIGENCE?

ArtificialIntelligenceisnot just a buzzword; it'satransformativeforce that is reshaping industries, solving complex problems, and revolutionizing the way we live and work.

So, let's dive into the world of Artificial Intelligence, where machines become intelligent companions in our quest for progress and innovation.

HISTORICAL CONTEXT

the birth of artificial intelligence

the AI resurgence

ethical & philosophical considerations

KEY CONCEPTS

natural language processing

neural networks

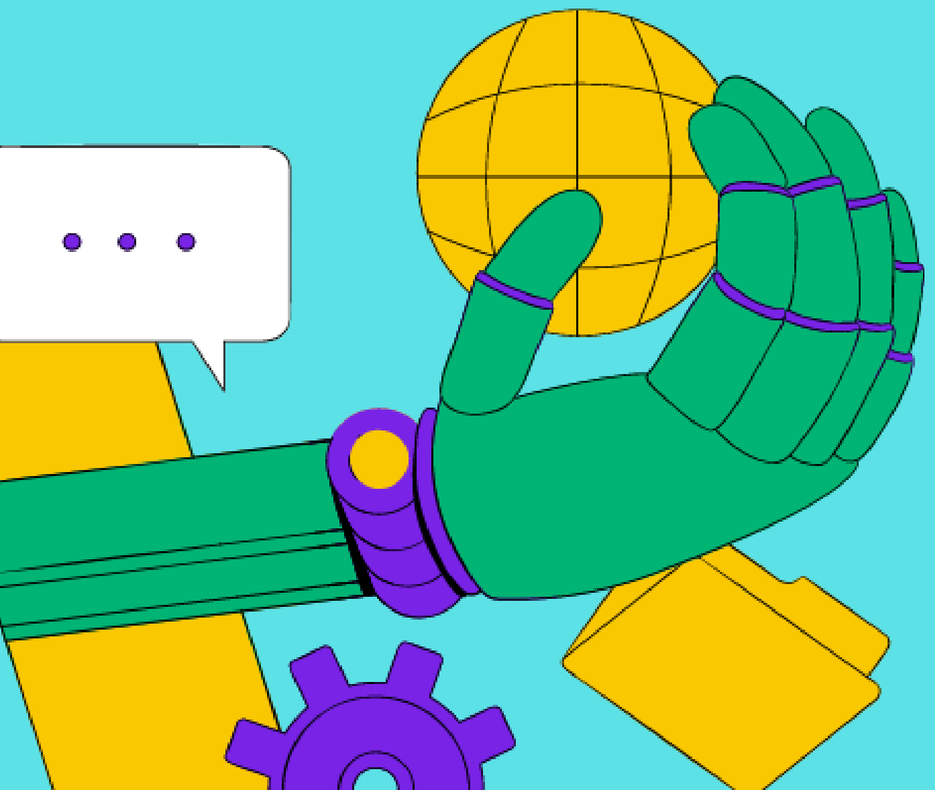
reinforcement learning

machine learning

computer vision

ethical AI

WHAT IS MACHINE LEARNING?



Machine learning is a subset of AI that focuses on the development of algorithms and models that enable computers to learn from and make predictions or decisions based on data.

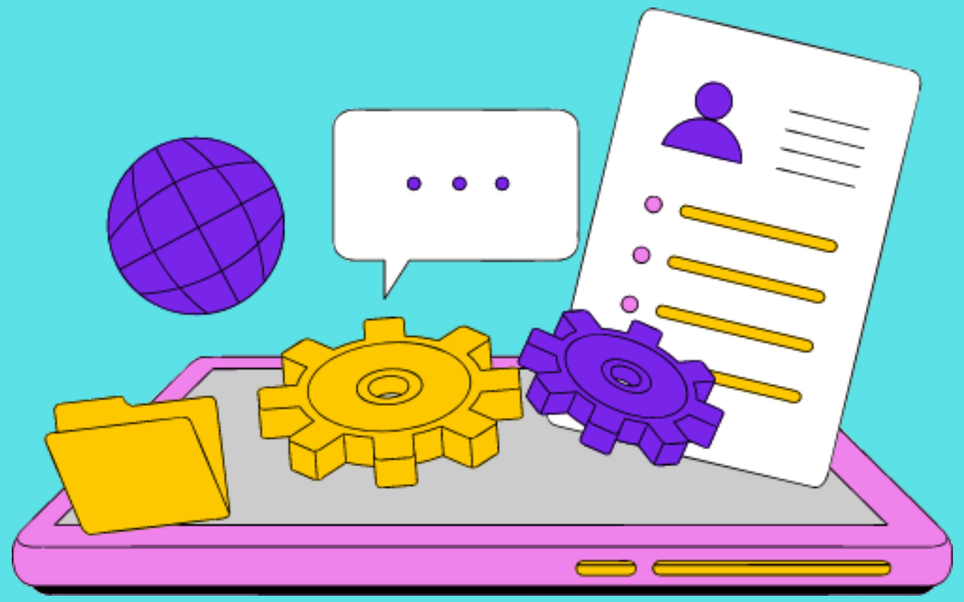
It's a key driver of AI applications, including natural language processing, image recognition, and recommendation systems.

TYPES OF MACHINE LEARNING?

Supervised Learning

Unsupervised Learning

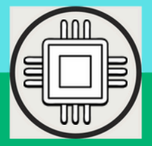
Reinforcement Learning



ROLES OF DATA IN MACHINE LEARNING?

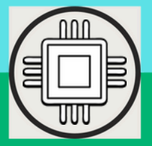
- Training Machine Learning Models
- Testing and Evaluation
- Future Engineering
- Anomaly Detection
- Data Augmentation

CASE STUDY SAMPLES



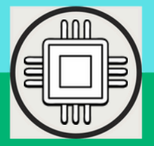
HEALTHCARE

Predicting Disease Outcomes



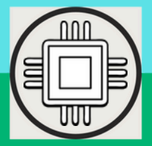
FINANCE

Algorithmic Securities Trading



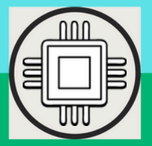
RETAIL

Personalized Recommendations & Cart Management



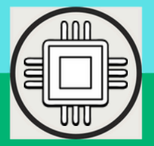
MANUFACTURING

Predictive Tools Maintenance



TRANSPORTATION

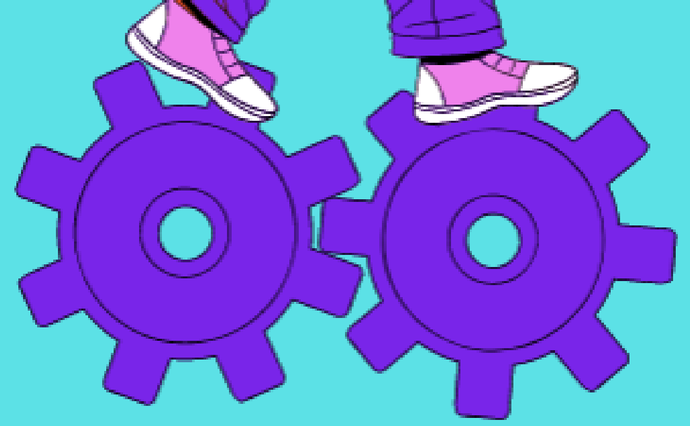
Autonomous Vehicles (Hybrid)



ENERGY

Energy Consumption Optimization

REAL WORLD APPLICATIONS



2025

Radiologists and healthcare professionals employed deep learning algorithms to analyze medical images such as X-rays, MRIs, and CT scans.

2030

An educational platform uses AI to provide personalized learning experiences for students as well as assessments suited to learnings.

2035

Asmart grid system utilized AI to optimize energy consumption in urban areas. The system adjusted energy distribution to reduce waste and costs.

2040

By using natural language processing, the chatbot understood and responded to customer queries reducing response times.

ETHICAL CONSIDERATIONS

01

BIAS ANDFAIRNESS

AI systems can inherit biases from their training data, which may result in unfair or discriminatory outcomes. Ethical AI requires addressing and mitigating bias to ensure that AI systems are fair and equitable for all individuals and groups.

02

DATA PROTECTION

AI often relies on large datasets, raising concerns about data privacy. Ethical AI practices involve protecting individuals' data and ensuring transparency about how data is collected, used, and stored.

03

AUTONOMYAND CONTROL

Ethical AI considers the degree of autonomy given to AI systems and the control mechanisms in place. Maintaining human oversight and control is important in critical decision-making processes.

DEPLOYMENT AND INTEGRATION

DATA PREPARATION

- Data collection, cleaning, and preprocessing
- Ensuring data quality and reliability
- Data labeling and annotation

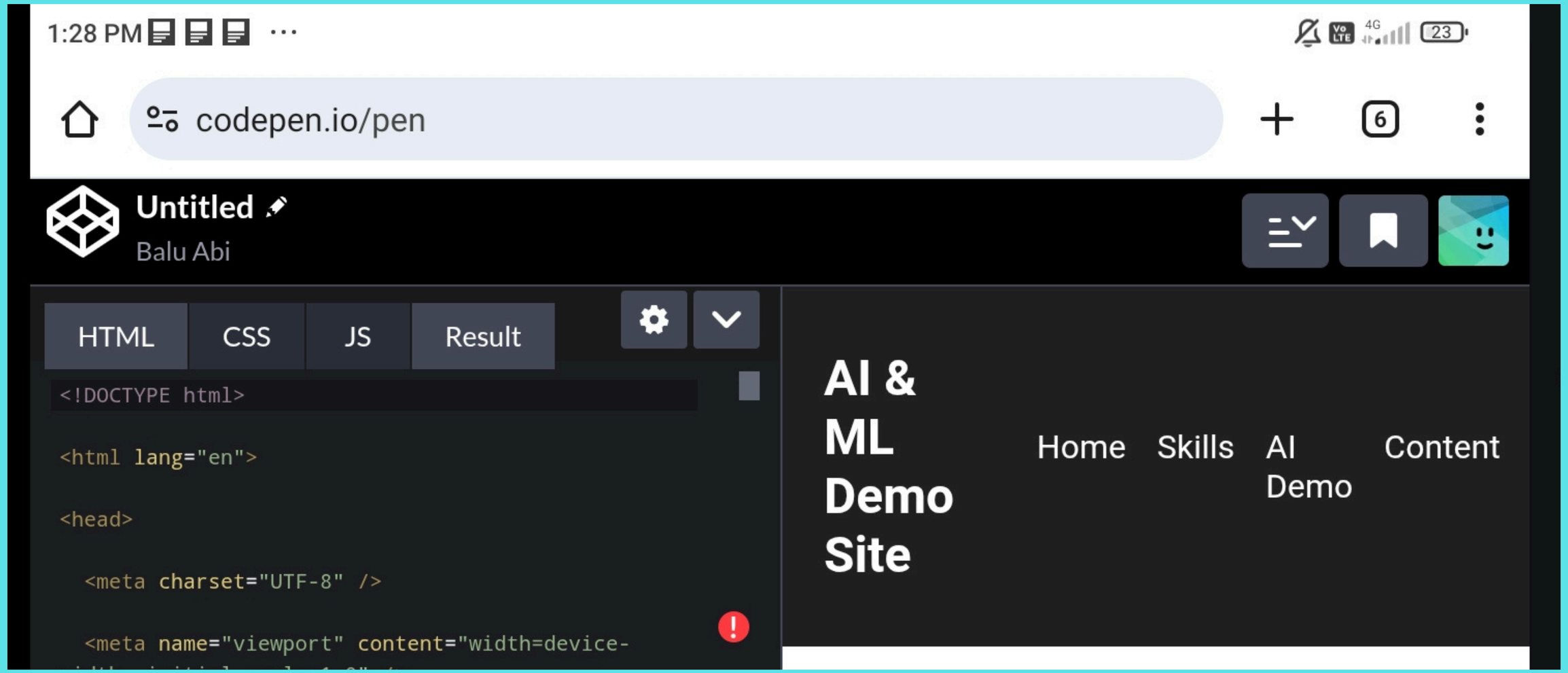
MODEL DEVELOPMENT

- Selection of appropriate machine learning algorithms
- Model architecture and hyperparameter tuning
- Training process and validation

MODEL EVALUATION

- Cross-validation and testing on validation datasets
- Assessing model performance, including accuracy, precision and recall

SCREENSHOT AND RESULT



PREPARING FOR THE FUTURE

Preparing for the future with artificial intelligence (AI) involves strategic thinking, adaptability, and a focus on harnessing the potential of AI to drive innovation and address societal challenges.

Here are some key steps and considerations for preparing for the future with AI:

- Education and Skills Development
- Data Management and Security
- Ethical and Responsible AI
- AI Integration and Talent
- Innovation and Culture

Thank you!