

# MACHINE LEARNING & AI ENGINEER PROGRAM

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**RC**™ Ramaq  
Chools  
Consulting & Training

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# INTRODUCTION TO MACHINE LEARNING & AI

Hey there, future AI specialist! Machine learning and artificial intelligence are revolutionizing industries with advanced algorithms and intelligent systems. Our comprehensive curriculum covers everything from machine learning algorithms to AI analytics, preparing you to lead in this cutting-edge field.





# Why Choose Chools?

## Numbers That Speak for Themselves:

- 10,000+ Successful Alumni: Join a network of impactful professionals.
- 95% Job Placement Rate: Secure your future with Chools' proven track record.
- 20+ Years of Excellence: Trust in a legacy of education and industry expertise.
- 200+ Industry Partnerships: Leverage our connections for real-world insights and opportunities.

## What Sets Us Apart?


- **Seasoned Instructors:** Learn from industry experts with practical experience.
- **Hybrid Learning Model:** Enjoy the flexibility of online learning with the benefits of in-person engagement.
- **Dynamic Curriculum:** Stay updated with courses designed to match market demands.
- **Vibrant Community:** Engage with a thriving community of learners and professionals

## Who Can Apply?

### Eligibility Criteria:

- **Eligibility Criteria:** Bachelor's degree in any subject, preferably with a STEM background. Good command of English.



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- **Ideal Candidates:** Professionals with a basic understanding of object-oriented programming, some prior knowledge of machine learning and AI concepts and tools, and a keen interest in advancing their skills in these areas

## Program Overview

The Machine Learning & AI Engineer Program at Chools offers a deep dive into the fields of machine learning and artificial intelligence. Combining theoretical knowledge with practical experience, the program is structured into four progressive stages to ensure a comprehensive understanding of the subject matter.

### Learning Mode:

- **Hybrid Learning Model:** Combines online learning with in-person sessions for flexibility and interactive engagement.
- **Interactive Sessions:** Includes live webinars, workshops, and Q&A forums with expert instructors and peers.
- **Self-paced Learning:** Access course materials anytime, allowing you to learn at your own pace.



## Skills Learned

- **Machine Learning Algorithms:** Supervised, unsupervised, and reinforcement learning.
- **Artificial Intelligence (AI):** Intelligent agents, natural language processing, computer vision, robotics, deep learning, AI analytics.
- **Data Wrangling:** Cleaning and preparing data for analysis.
- **Data Visualization:** Creating impactful visualizations.
- **Statistical Inference:** Making data-driven decisions.
- **Cloud Computing:** Utilizing cloud platforms for AI tasks.
- **AI Ethics:** Understanding responsible AI use.
- **Big Data Technologies:** Handling large datasets with Hadoop and Spark.
- **Programming Skills:** Proficiency in Python and other relevant languages.
- **AI Engineering:** Building and deploying AI models and systems.

## Job Positions and Opportunities

- **Career Paths:** Machine Learning Engineer, AI Engineer, Data Scientist, AI Researcher, AI Consultant, Computer Vision Engineer, NLP Engineer, Robotics Engineer.
- **Industry Demand:** High demand across sectors, competitive salaries, and strong growth potential.

## Key Industry Verticals


- **Skill Application Areas:** Finance, Healthcare, Retail, Technology, Marketing, Manufacturing, Energy, Education, Telecommunications, Logistics and Supply Chain, Government and Public Services.



## Program Objectives

- Master technical skills in machine learning and AI.
- Apply advanced machine learning algorithms.
- Explore AI concepts like natural language processing and computer vision.
- Tackle real-world AI challenges.
- Understand AI ethics principles.
- Foster continuous learning.
- Promote teamwork and collaboration.
- Prepare for high-level AI roles.

## Expected Outcomes

- Proficiency in machine learning and AI tools and techniques.
  - Practical experience through hands-on projects.
  - Strong analytical and problem-solving abilities.
  - Application of ethical AI practices.
  - Innovation in AI-driven solutions.
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# PROGRAM OUTLINE

## Stage 1: Fundamentals of Machine Learning & AI

### 1. Introduction to Machine Learning & AI

- o Core principles, tools, and industry applications.

### 2. Basics of Machine Learning Algorithms

- o Supervised and unsupervised learning fundamentals.

### 3. Introduction to AI Concepts

- o Overview of intelligent agents, NLP, computer vision.

### 4. Python Programming for ML & AI

- o Python syntax, data handling, and essential libraries.

## Stage 2: Advanced Analytical Tools

### 5. Advanced Machine Learning Techniques

- o Deep learning, reinforcement learning, AI analytics.

### 6. Data Visualization for AI

- o Creating interactive visualizations and dashboards.

### 7. AI Ethics and Privacy

- o Ethical considerations, privacy laws, compliance strategies.

### 8. Intermediate Python for AI

- o Using advanced libraries for AI development.

## Stage 3: Practical Applications

### 9. Data Cleaning and Preprocessing

- o Techniques for ensuring data quality and reliability.

### 10. Exploratory Data Analysis (EDA) for AI

- o Analyzing data distributions, identifying patterns.

### 11. Advanced Data Integration Techniques

- o Integrating data from multiple sources.

### 12. Building AI Models

- o Implementing and optimizing AI models.

## Stage 4: Capstone Project

### 13. Integration of Learned Skills

- o Apply tools and techniques to real-world AI problems.

### 14. Advanced Natural Language Processing (NLP)

- o Text analysis, sentiment analysis, topic modeling.

### 15. Computer Vision Techniques

- o Object detection, image classification, deep learning for CV.

### 16. AI for Robotics

- o Building and programming intelligent robotic systems.



# PROGRAM OUTLINE

## Elective Modules

### 17. Predictive Analytics with AI

- o Building and validating predictive AI models.

### 18. AI in Healthcare

- o Applying AI techniques to healthcare data and problems.

### 19. AI for Finance

- o Implementing AI solutions in financial services.

### 20. Big Data Technologies for AI

- o Using Hadoop and Spark for large-scale AI applications.

### 21. AI-Driven Decision Making

- o Using AI to inform and drive business strategies.

### 22. Cloud AI Solutions

- o Deploying AI models and services on cloud platforms.

### 23. AI Project Management

- o Leading AI projects, ensuring successful delivery.

### 24. Reinforcement Learning Applications

- o Advanced techniques and applications of reinforcement learning.

### 25. AI for Natural Language Processing (NLP)

- o Advanced text analytics and processing techniques.

## Enrollment Now Open!

Take the first step towards mastering machine learning and AI. Enroll in our Machine Learning & AI Engineer Program and become a certified AI engineer with Chools.