

DECRYPTING

MASTER AI TODAY, LEAD TOMORROW

Essential AI Training for

High School &
College Students



Fundamentals of AI: A Practical Insightful Session

Understanding the AI Revolution That's Changing Everything

Audience:

High School and College Students

Course Overview: Fundamentals of AI

What You'll Learn

This transformative AI course bridges the gap between theoretical complexity and practical mastery, converting cutting-edge concepts into immediately applicable knowledge. Whether you're a high school student building a competitive foundation for college admissions, or a college student strategically positioning yourself for tomorrow's career landscape, this course serves as your comprehensive gateway to AI literacy.

Why This Course Matters

Artificial Intelligence represents the most transformative technological force of the twenty-first century, fundamentally reshaping every sector from finance and healthcare to manufacturing and education. This isn't merely technological evolution—it's a paradigm shift that's redefining the nature of work, business strategy, and societal interaction.

Module 1: Understanding Generative AI

● Key Concepts of Gen AI

- What is Generative AI? (Practical examples: ChatGPT, Midjourney, DALL·E)
- Difference between Gen AI and traditional AI
- AI in Everyday Life

● Building Blocks of Gen AI

- Neural Networks
- Transformers
- Training Data

● Limitations of AI and Gen AI

- What can AI do and can't do?
- What will be possible in a few years
- Bias and hallucination
- Ethical and practical challenges

Module 2: Core AI Techniques and Tools

● Prompting Techniques

- Effective prompt design
- Different types of prompts
- Common pitfalls and tips for better results

● Multi-Modal LLMs

- Combining text, image, video, and audio
- Examples: GPT-4, Gemini

- **Voice AI and Computer Vision**

- Speech recognition and voice assistants (Alexa, Siri)
- Object recognition, facial recognition, and real-world use cases

- **Open Source LLMs**

- Introduction to open models (LLaMA, GPT-J, Falcon)

Module 3: Advanced Concepts in AI

- **Retrieval-Augmented Generation (RAG)**

- Enhancing accuracy and reducing hallucinations
- Real-world applications of RAG

- **AI Agents**

- What are autonomous AI agents? (AutoGPT, AgentGPT)
- Practical use cases in industries

- **AI Governance and Bias**

- Why governance matters
- Identifying and mitigating biases in AI systems

Module 4: AI Across Industries

- **Finance**

- Fraud detection, algorithmic trading, credit scoring

- **Pharma**

- Drug discovery, clinical trial optimization

- **Telecom and Media**

- Predictive maintenance, customer experience automation

- **Manufacturing**

- Predictive analytics, automated inspections, process automation

Module 5: Practical AI Tools and Industrialization

- **AI Productivity Tools**

- ChatGPT, Claude, Bard, Canva AI, Excel-based AI tools

- **AI for Small Business**

- How to increase your productivity many times

- **AI Industrialization**

- Infrastructure, training, and monitoring considerations

- **Best Practices in Industrylization**

- Effective data management, continuous learning, cross-functional collaboration

- **Data Analysis Using AI**

- How AI-driven analytics tools generate insights

Module 6: Executing AI Projects and Trends

- **Executing Successful AI Projects**

- Steps: Ideation → Proof of Concept → Pilot → Scaling → Monitoring and Improvement

- **ROI Calculation Models**

- How to estimate ROI for AI projects (example framework)

- **Latest AI Research and Trends**

- Emerging trends in AI and AGI research
- Current developments and future outlook

Course Wrap-Up

- Summary and key takeaways
- Recommended resources and further reading