**Unlocking the Potential of AI in Education: What Higher Education Needs to Know**

**Artificial Intelligence and Machine Learning**

This outline will provide you with a foundation of practical knowledge on artificial intelligence (AI) and machine learning. You will begin with the science behind AI computer systems, which can perform tasks that typically require human intelligence, and AI ethics, applications, and more. Then you will move on to a more thorough look at machine learning, the problem it is trying to solve, and specific techniques and applications used in supervised, unsupervised, and semi-supervised learning.

The Artificial Intelligence and Machine Learning topics will prepare you with a practical knowledge foundation of key definitions, applications, processes, techniques, and more, enabling you to sharpen your knowledge and skills in the fields of AI and machine learning.

**Introduction to Artificial Intelligence**

This outline will introduce you to various forms of artificial intelligence (AI) and how we interact with AI as consumers in applications like chatbots and recommendation engines. You will see how AI provides analytics in business and consider industries that may be transformed or even disrupted by AI implementations. Next, you will go under the hood to see how computers can "learn" using artificial neural networks and various forms of machine learning. You will review AI applications such as natural language processing, forecasting, and robotics. You will also learn about the AI development process and how AI will affect the workforce. And lastly, you will consider some of the ethical factors in AI deployment.

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| 1. **Introduction to Artificial Intelligence**
2. **Artificial Intelligence in Business Today**
3. **Machine Learning**
4. **Neural Networks and Deep Learning**
 | 1. **Computer Vision**
2. **Natural Language Processing**
3. **Time Series Forecasting**
4. **Robotics**
 | 1. **Implementing AI**
2. **AI and the Workforce**
3. **AI Ethics**
4. **The Future of AI**
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**Introduction to Machine Learning**

Machine learning can be used to solve specific kinds of problems when key considerations in selecting data for a machine learning project are implemented properly. You will learn about specific techniques used in supervised, unsupervised, and semi-supervised learning, which applications each type of machine learning is best suited for, and the type of training data each requires.

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| 1. **Introduction to Machine Learning**
2. **Which Problems Can Machine Learning Solve?**
3. **The Machine Learning Pipeline**
4. **Working with Data**
 | 1. **Supervised Learning: Regression**
2. **Supervised Learning: Classification**
3. **Ensemble Methods**
4. **Unsupervised Learning**
 | 1. **Semi-Supervised Learning**
2. **Reinforcement Learning**
3. **Building and Deploying Machine Learning Apps**
4. **Beyond Machine Learning**
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