Module 5 – Machine Learning for Computer Vision - Overview

The next module is about “**Machine Learning for Computer Vision.**” I covered essential concepts and techniques that power modern computer vision applications. I explored the basics of supervised and unsupervised learning, understanding data types, and the importance of features and labels. I researched the machine learning lifecycle, from problem definition and data processing to model training, evaluation, and deployment. Key algorithms like support vector machines (SVM), k-nearest neighbors (k-NN), and random forests are discussed in this model, along with deep learning approaches that offer more flexibility and power for complex vision tasks. The portfolio highlights practical applications, emphasizing the balance between traditional machine learning techniques and advanced deep learning models, demonstrating how these tools can be effectively used to solve real-world computer vision problems. Here are some key points I learned during this module.

* **Foundations of Machine Learning**: Basics of supervised and unsupervised learning. Understanding data types, features, and labels.
* **Machine Learning Lifecycle**: Steps from problem definition and data processing to model training, evaluation, and deployment.
* **Key Algorithms**: Support vector machines (SVM), k-nearest neighbors (k-NN), and random forests. Exploration of deep learning approaches for complex vision tasks.
* **Practical Applications**: Balancing traditional machine learning techniques with advanced deep learning models. Demonstrating effective use in solving real-world computer vision problems.

A diagram of a learning process

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