## **Full Stack Gen AI**

## **Week 4 - Data Science**

### **Project 1: Learn Data Science using Wine Reviews Analysis**

#### **Topics Covered:**

* Virtual environment setup
* Exploring offline and online data science IDEs
* Introduction to machine learning libraries like Pandas, NumPy, and Matplotlib

#### **Project Tasks:**

1. Setup data science environment
2. Data manipulation or preprocessing with Pandas
3. Descriptive analysis and matrix calculation with NumPy
4. Data visualization with Matplotlib

### **Project 2: Learn Data Science using Housing Price Prediction**

#### **Topics Covered:**

* Machine learning libraries like Pandas, NumPy, and Matplotlib
* Feature engineering and model training with Scikit-learn library
* Regression algorithms like linear regression and decision tree
* Evaluation metrics for regression algorithms like R2 Score, Mean Absolute Error (MAE), Root Mean Squared Error (RMSE)

#### **Project Tasks:**

1. Data manipulation or preprocessing with Pandas
2. Descriptive analysis and matrix calculation with NumPy
3. Data visualization with Matplotlib and Seaborn
4. Feature engineering with Scikit-learn
5. Regression algorithms model training with Scikit-learn and Pickle
6. Evaluation of machine learning model