YoungDev Interns

Machine Learning Tasks

01 Month Remote Internship

Basic Tasks

Maintain a Github Reposatary of Tasks, Named as YoungDevInterns_Machine Learning_Tasks, Every Task Should be Uploaded on Linkedin & Facebook Mentioning Company’s Page

Task 1 : Implement a Simple Linear Regression

- Task: Create a linear regression model.
- Details:
- Use a library like scikit-learn to fit a linear regression model to a small dataset.
- Plot the regression line and make predictions.

Task 2 : Classify Data with a Decision Tree

- Task: Train a decision tree classifier.
- Details:
- Use scikit-learn to train a decision tree on a dataset like Iris.
- Evaluate the model’s performance using accuracy and a confusion matrix.

Task 3 : Visualize Data with a Scatter Plot

- Task: Create a scatter plot to visualize relationships in data.
- Details:
- Use libraries like matplotlib or seaborn to plot a scatter plot of two features.
- Analyze how features are correlated.

Intermediate Tasks

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Task 1 : Build a Model with Cross-Validation

- Task: Evaluate a model using cross-validation.
- Details:
- Use k-fold cross-validation with scikit-learn to assess model performance.
- Compare metrics such as accuracy or F1-score across folds.

Task 2 : Preprocess Data for Machine Learning

- Task: Clean and prepare data for modeling.
- Details:
- Handle missing values, normalize features, and encode categorical variables using scikit-learn.
- Split data into training and testing sets.

Task 3 : Create a Classification Report

- Task: Generate a detailed classification report.
- Details:
- Use scikit-learn to train a classification model.
- Produce a report including precision, recall, and F1-score for each class.

Expert Tasks

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Task 1 : Develop a Neural Network for Classification

- Task: Build and train a neural network.
- Details:
- Use TensorFlow or PyTorch to create a neural network for a classification task.
- Train the model and evaluate its performance on a test set.

Task 2 : Implement Hyperparameter Tuning

- Task: Optimize model hyperparameters.
- Details:
- Use tools like GridSearchCV or RandomizedSearchCV to find the best hyperparameters for a model.
- Evaluate the impact of different hyperparameters on model performance.

Task 3 : Deploy a Machine Learning Model

- Task: Deploy a trained model to a web service.
- Details:
- Use a framework like Flask or FastAPI to create an API for your model.
- Deploy the API to a cloud platform such as AWS, Azure, or Google Cloud.