Iris Flower Classification

By

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Outlines

- Introduction
- Literature Review
- Objectives
- Result Example
- Result Analysis
- Limitations
- Conclusion & Future Scope
- References
- Acknowledgement

Introduction

- **Objective:**

  Develop a machine learning model for Iris flower classification.

- **Dataset Overview:**

  Introduction to Iris flower dataset.
  Three classes: Setosa, Virginica, Versicolor.
  Four features: Sepal Length, Sepal Width, Petal Length, Petal Width

- **Significance:**

  Showcase machine learning's importance in classification tasks.

- **Relevance:**

  Iris classification as an introductory ML project.

Literature Review

- **Scope of Logistic Regression:**
  Suitable for classification tasks.

- **Applications of Iris Classification:**
  Potential use cases in botany, agriculture, and ecological studies.

- **Limitations:**
  Acknowledgment of challenges in flower classification.
  Insights into the limitations of existing methods.

Objectives

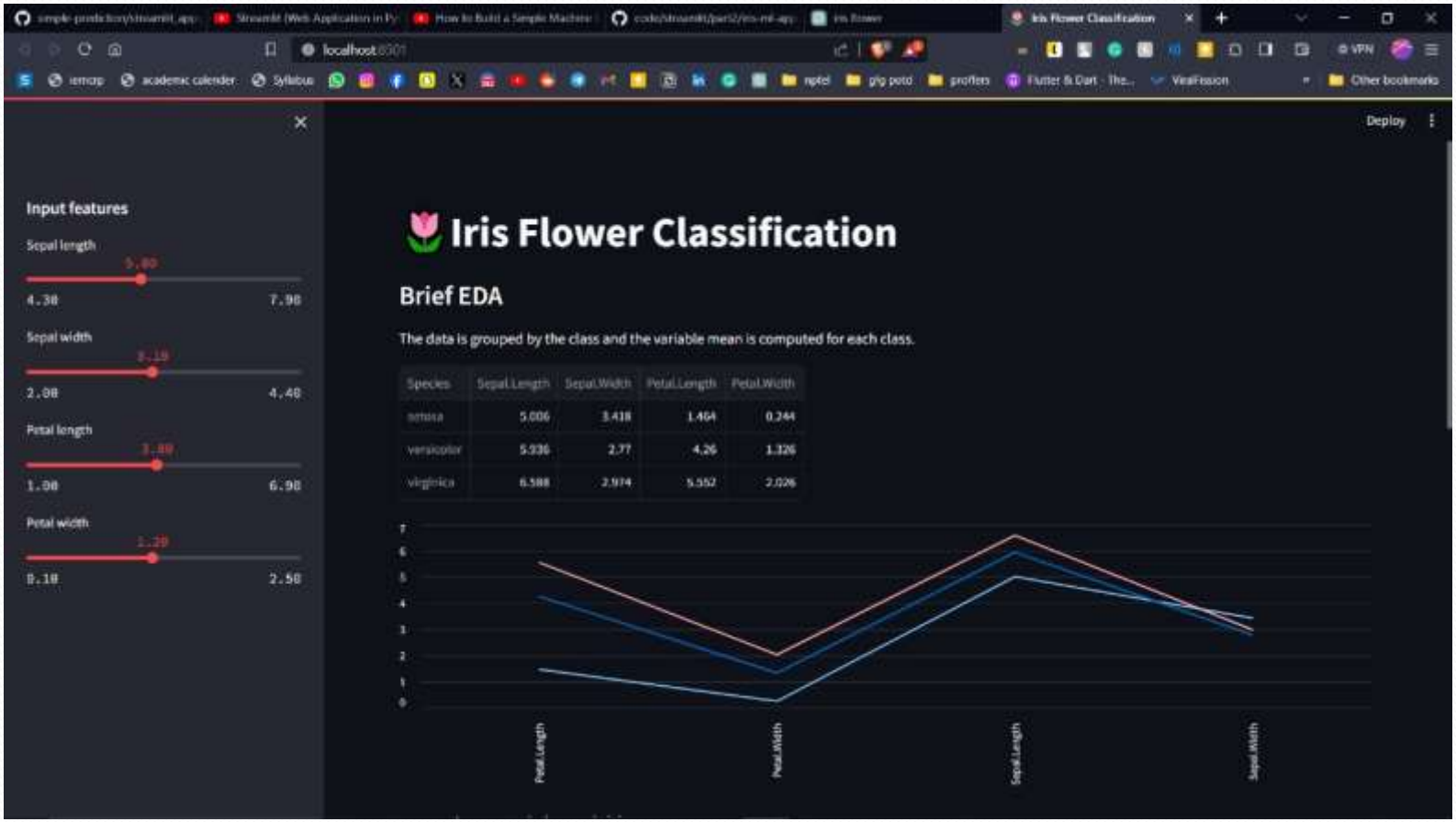
- **Primary Objective:**
  Achieve accurate and efficient classification of Iris flower species.

- **Utilizing Machine Learning:**
  Implement Logistic Regression for the classification task.

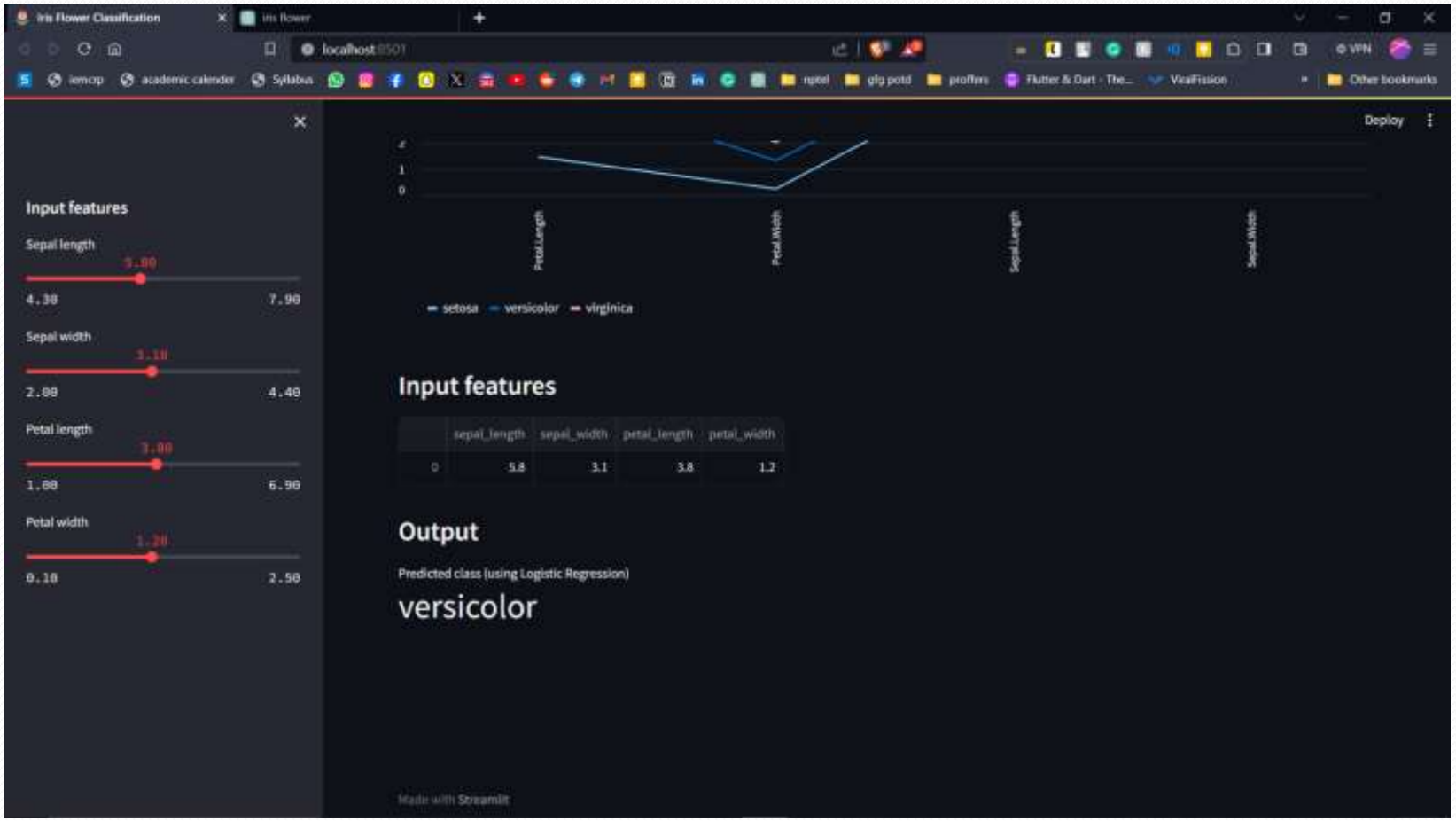
- **Streamlit Integration:**
  Utilize Streamlit for creating an interactive and user-friendly application.

- **Prediction Probabilities:**
  Enhance the project by providing prediction probabilities.

Result: Example



Result Analysis



Limitation

- **Limited to Iris Flower Classification:** The model is specifically designed for the classification of Iris flower species. Not suitable for broader applications outside the scope of this dataset.

- **Dependency on Input Features:** The model relies heavily on accurate input features (sepal and petal measurements).
  Inaccuracies in measurements may affect the model's predictive accuracy.

- **Static Model:** The current model is static and does not adapt to new data or evolving patterns.
  Future updates may be necessary to enhance adaptability.

Conclusions & Future Scope

- **Successful Iris Classification:**

The project has successfully implemented a Random Forest Classifier for Iris flower classification.

- **Image-Based Classification:**

Expand the project to incorporate image-based classification.
Develop a feature where users can upload images for automatic feature extraction and classification.

- **Multi-Class Classification:**

Explore datasets with a broader range of flower species.

- **Enhanced User Interaction:**

Incorporate feedback mechanisms to allow users to provide feedback on predictions.
Use user feedback to continuously enhance the model's accuracy and reliability

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Thank You!