Career Guidance Chatbot - Project Report

Date: June 13, 2025

Introduction

In today's dynamic world, selecting the right career path is challenging for students due to the abundance of options and lack of proper guidance. This project aims to provide a simple, AI-powered chatbot that suggests career options based on a user's interest using Natural Language Processing (NLP). The chatbot was built using Rasa for intent classification and Streamlit for the user interface.

Abstract

The Career Guidance Chatbot is an intelligent assistant that interacts with users in natural language to suggest relevant career options such as technology, arts, agriculture, gaming, law, and more. By recognizing user intents through predefined training data, it offers appropriate responses for each domain. Though the model currently covers basic intent recognition, it is a strong foundation for expanding into more personalized and context-aware career suggestions.

Tools Used

- Python: Core programming language used.
- Rasa (NLP Framework): For intent recognition and dialogue management.
- Streamlit: Used for creating an interactive and user-friendly frontend.
- VS Code: For code development.
- Anaconda / Command Prompt: For environment and script execution.
- GitHub (optional): For code hosting and version control.

Steps Involved in Building the Project

1. Defined Intents and Responses: Created intents like 'technology', 'arts', 'science', etc., in the nlu.yml and matching responses in domain.yml.
2. Slot Configuration: Basic slot settings for user inputs were added.
3. Domain and Story Setup: Domain file structured to include utter actions, and stories were written to map intents to responses.
4. Training: The model was trained using Rasa's CLI.

5. Streamlit Interface: A simple chatbot_interface.py file was written to connect Streamlit to the running Rasa server.

6. Testing: Bot was tested for various user inputs like 'I want to explore technology careers.'

7. Bug Fixes: Resolved ActionNotFoundException errors by updating domain.yml.

Conclusion

The Career Guidance Chatbot successfully demonstrates how conversational AI can simplify career counseling for students. While the current prototype handles basic queries effectively, more training data and improved conversation flows will enhance its accuracy and usability. Future enhancements could include voice interaction, dynamic recommendations, and integration with academic databases.

Note

This project is a prototype and currently requires more training data to improve performance.