Developing an Intelligent Chatbot

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Abstract

ABSTARACTIONS

1 Introduction

In recent years, chatbots have become increasingly popular in a variety of applications, as such, so has the technology surrounding them. It is not our mission to compete with the likes of OpenAI (2024*b*), Microsoft (2024) and GitHub (2024*a*) and their hugely successful LLMs, OpenAI (2024*a*) and GitHub (2024*b*) respectively. At the end of the day, any coursework is a learning experience.

Our solution is a small clientside chatbot, integrated into an intuative graphical user interface and designed to handle prompts around a bespoke context. We utilise modern natural language processing (NLP) techniques, with a knowledge base and infernece engine, conjuncting machine learning and web-scraping, in the name of enabeling the user with concurrent information to make informed descicions on their travel plans.

1.1 Background and Motivation

As specified in the assignment brief Wang (2018), tasks one and two are to implement an intelligent conversational system designed "*to help their customers in finding the cheapest available ticket for their chosen journey*" and "*to improve customer service satisfaction by applying some appropriate AI techniques*" respectively. Following course content and implicit suggestions from the modules authorative figures, our second task implements a delay prediction model, based on historical data (also provided in the course material), in the form of KNN regressor (Fix & Hodges (1951)), embedded within the original chatbot system created in task one.

References

Fix, E. & Hodges, J. L. (1951), 'Discriminatory analysis, nonparametric discrimination'.

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Wang, W. (2018), 'Artificial intelligence modules (cmp6040, 7028) coursework specification'.