

Capstone Project V – NLP

Innovative NLP Technology

Azure AI Language

Azure AI Language is an advanced cloud-based service designed to cater to Natural Language Processing (NLP) needs, allowing users to comprehend and analyse text efficiently. Leveraging the web-based Language Studio, REST APIs, and client libraries, developers can build intelligent applications with ease.

Preconfigured features are ready-to-use AI models that do not require customization. Users can seamlessly integrate these features into their applications by simply providing the relevant data. Among these features, Named Entity Recognition (NER) stands out, categorizing entities in unstructured text across predefined groups such as people, events, places, dates, and more. Additionally, the service offers Personally Identifying Information (PII) and Health Information (PHI) detection, aiding in the identification and redaction of sensitive information like phone numbers, email addresses, and forms of identification.

Language detection is another preconfigured feature that accurately identifies the language in which a document is written, providing a language code for a wide array of languages, variants, dialects, and regional/cultural languages. Sentiment Analysis and Opinion Mining preconfigured features enable users to gauge public sentiment about a brand or topic by analysing text for positive or negative clues.

For more advanced applications, Azure AI Language provides customizable features, allowing users to train AI models to meet specific data requirements. Custom Text Classification empowers users to define their own classes for unstructured text documents, while Custom Named Entity Recognition (Custom NER) enables the creation of custom entity categories using user-provided unstructured text.

Conversational Language Understanding (CLU) is a powerful feature that lets users build custom natural language understanding models, predicting the overall intention of an incoming utterance and extracting crucial information from it. The Orchestration Workflow custom feature facilitates the connection of CLU, question answering, and LUIS applications, streamlining the development process.

Question Answering, a custom feature, aids in finding the most suitable answers to user inputs, making it particularly useful for building conversational client applications like social media platforms, chatbots, and speech-enabled desktop applications. Custom Text Analytics for Health is another customizable feature, allowing the extraction of healthcare-specific entities from unstructured text using user-created models.

In conclusion, Azure AI Language offers a sophisticated suite of preconfigured and customizable features, providing developers with the tools to enhance language understanding, sentiment analysis, and information extraction in their applications. With its diverse set of capabilities, Azure AI Language empowers developers to create intelligent and tailored solutions for a wide range of linguistic challenges.

References:

1. Microsoft. (2023). Azure AI Services - Language service overview. Retrieved from <https://learn.microsoft.com/en-us/azure/ai-services/language-service/overview>