COMP39/9900 Computer Science/IT Capstone Project
School of Computer Science and Engineering, UNSW

Project Number: P30

Project Title: EA-Assist

Project Clients: Dr.Basem Suleiman, Iromie Samarasekara

Project Specializations: Web application development; Artificial Intelligence (Machine/Deep Learning, NLP);Big data analytics and visualization; Human Computer Interaction (HCI).

Number of groups: 2

Main contact: Iromie Samarasekara

Background:

With the increasing complexity of today's business environments, organizations are increasingly interested in having a comprehensive conceptual representation of their operating model and enterprise architecture. However, owing to the siloed and tacit orientation of knowledge within enterprises, enterprise modelling has become a challenging task which imposes a significant cognitive burden on enterprise architects and business analysts. EA-Assist will help to mitigate this problem by providing real time conversational assistance to enterprise architects that is both context specific and reliable.

Requirements and Scope:

The EA-Assist project aims to develop a Chatbot that helps enterprise architects to perform modelling on enterprise elements. The application should be able to provide conversational assistance that is customized for the context of the user. The responses may range from definitions to customized entity mappings based on generic industry standards and should also be capable of performing entity extraction from unstructured documents.

Key Features:

1. Document Analysis: The application shall be capable of analysing unstructured data to extract the relevant information and provide the output as chat responses

2. LLM Integration: Integration with ChatGPT API to respond to industry specific queries in a more personalized manner

3. Textual and Visual Outputs: The application should be capable of providing outputs that are textual for straight forward queries or questions that demand explanations. However, diagrammatic outputs would be required to present models as responses.

4. Ability to Download: Users shall be able to download models in multiple formats (JPG, PNG and PDF)

Innovative Features:

Develop at least two additional innovative features beyond the required ones.

Required Knowledge and skills:

Web application Development, APIs, Natural Language Processing, Basic understanding on Large Language Models.

Expected outcomes/deliverables:

- Documented source code and a final recorded demo (Following requirement in the proposal for the demo).
- Project documentation covering requirements, architecture design, user workflows, data models, and user guides. A section on challenges encountered.

Supervision:

Iromie Samarasekara

Additional resources:

Existing tools for shoreline extraction from:

The project will require artifacts related to common enterprise architecture elements and their definitions which can be openly accessed via the web.
Example: Capabilities, Value Streams, Capability maps etc.
Specific documents can be provided later.