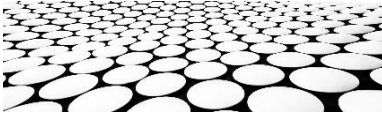

CSI5180 Topics in AI
Virtual Assistants



PROJECT

Step 1 – Project Definition



GOALS

The goal of the course project is to further explore, through a programming project, a topic covered in the course or a topic related to what we see in the course. It is an individual project worth 25% of your semester and you are expected to work about 30 hours on your project. The project will allow you to gather hands-on experience on a subject that you would like to further explore.

The more specific goal of this Step 1 – Project Definition, is to decide on your project, define its purpose, deliverables, timeline, and have it approved before starting your project.



SUBMISSION DEADLINE

There are three components to the project, each with its deadline. The components are mentioned below, and your focus now is on your Project Definition.

(1) Project Definition (3%)

- Deadline March 17th, 11:30 pm.
- Submit a small report to explain your choice of topic, programming environment, project objectives, etc.

(2) Project Presentation/Demo/Report (15%)

- Deadline April 11th, 11:30pm
- Submit a 10-15 minute presentation. The presentation should show your work and include a demonstration of your software.

(3) Peer evaluation (7%)

- Deadline April 15th, 11:30pm

PLEASE NOTE: The requirements for the project presentation and the peer review will be provided on Brightspace later in March.



SUBMISSION METHOD

- You have all received an invitation to the Eduflow platform, so you can log in.
- You must submit your project definition report in Eduflow. You will receive the professor's feedback within Eduflow.
- Make sure to submit under Project Definition (final).



INSTRUCTIONS

Project Definition

Decide on a topic that you wish to explore. Here are some suggestions/ideas, but your own idea is most welcome. Your topic should be within the scope of Virtual Assistants and be based on an existing software environment and/or involve some programming. You **MUST** submit your project definition and have your project approved. If you are unsure about your idea, I encourage you to discuss your project idea before submission during a one-on-one session or submit an informal idea on Eduflow.

- Build a domain-specific chatbot in Dialogflow, in RASA (or other platform). By domain-specific, you can choose something related to health, exercise, food, time management, sport, etc.
- Work on a specific international competition:
 - Find a Q/A task + dataset. Develop a simple Q/A system and test it.
 - Find an intent detection dataset. Develop a simple intent classification system using deep learning, or other approaches, and test it.
 - Find a structured data to text (NLG) dataset. Develop a simple NLG system using deep learning or any other method, and test it.
- Develop a speech recognition system, exploring packages such as SpeechRecognition package in Python. Make it domain-specific, so it would recognize spoken sentences related to a particular task (e.g. restaurant).
- Test different speech recognition platform/APIs using some dataset for a comparative study.
- Read an article on Intent Detection and implement their idea.
- Find software on Github for Intent Detection, or Speech Recognition, or Q/A, and understand/test/adapt it.
- Develop a Natural Language Generation system which can generate simple sentences in a conversational system.
- Investigate Almond (from OVAL) and develop a skill (a thing) that can be integrated with Almond.
- ...

Project Realisation

Once your project definition is approved, you will have to implement your idea as you defined it. You will have to do a short presentation (10-15 minutes) about your project, and this presentation will be peer-reviewed by your colleagues.



EVALUATION

- **Project Definition (3%)** - The report you submit will be marked on 10 points
 - Title of your project (1 point)
 - Short description of goals and limitations (4 points)
 - What will you achieve (learn + produce) and what is your prior knowledge of this task?
 - Why do you want to do this project?
 - What will be the final deliverable and by whom could it be used?
 - What are the project boundaries that you are setting to be able to achieve your project within 30 hours? In other words, what is included and what is excluded of the project.
 - Description and justification of the software platform / programming involved / dataset involved (1 point)
 - Activity table in which you list the different activities involved in your project, and for each activity you provide a time estimate (4 points).

Example of Activity Table

Activity	Why	Time planned	Deliverable
Read article ...	Gather knowledge about X...	3h	(none)
Explore dataset	For testing ...	1h	(none)
Write code for preprocessing dataset	Required to make data into proper format for...	3h	Dataset in format Z
Develop baseline system	To have a simple system to compare to	4h	Baseline system
....			



QUESTIONS

- You can ask your questions on Brightspace in the Project Module part of the forum.