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**School of Computing**

**Final Year {Engineering / Research / Study} Project**

**Project Initiation Document**

**Amr Kamran**

**Improving on the efficiency and utilisation of AI chatbots in business**

# Basic details

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| --- | --- |
| Student name: | Amr Kamran |
| Draft project title: | Improving on the efficiency and utilisation of AI chatbots in business |
| Course and year: | Meng Computer Science, Level 5 |
| Project supervisor: | Dongxu Gao |
| Client organisation: |  |
| Client contact name: |  |

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# Degree suitability

*Please describe how your project satisfies the criteria for your current course. For example, if you are a Software Engineering student, please explain why your project is suitable for a Software Engineering degree.*

In my project I aim to further the field of AI powered chatbots and to attempt to find an answer to the extent of the uses for these chatbots in business scenarios. This project will require extensive research into the topic to find the best practices on the cutting edge of the field and apply them to my own prototypes. For these reasons I believe my project to be suitable for my Computer Science degree.

*In each section please write your text below ours in regular (non-italic) font and then delete our text.*

# Outline of the project environment and problem to be solved

*Explain the context of the project - a bit like setting the scene:*

|  |
| --- |
| *For engineering* ***projects without a client****:* |
| *What is the problem that you will investigate?*  The problem is that AI chatbots in businesses currently are inherently anti-customer. They are impersonal and often unable to help with tasks more than the most basic of tasks.  *Why is it worth working on?*  I believe there is currently untapped potential in the use of these chatbots and that better utilisation of these chatbots would help businesses, especially smaller ones improve their response times and provide better customer service at first point of contact. |

# Project aim and objectives

*What is the overall aim of the project?*

The aim of the project is to apply the current best practices and knowledge to create a new breed of AI powered chatbots that will be vastly more competent at than their predecessors at understanding customer needs and providing solutions that fit them.

*What are the objectives that will lead to you meeting that aim?*

The objectives are to achieve these aims are:

* Research into current best practices and improvement that can be made to them
* Using that research to produce a robust literature review
* Prototyping applying these improvements to chatbots
* Testing these improvements rigorously against current technology to ascertain if they are useful
* And finally, producing a final product that can achieve the aims set out previously.

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# Project constraints

*What constraints (things out of your control) are there on your project? For example, fixed timescales or you could not test a medical system on real patients.*

As this project is not being carried out with the backing of a client the testing of any prototype will lean to the theoretical side and any improvements measured would be in scenarios that are wholly constructed and not exhaustive in their investigation.

Further more

# Facilities and resources

*What computing/IT facilities will you use/require?*

Use of the machines in the university labs that are equipped with NVIDIA graphics cards to train AI models

*What other facilities/resources will you use/require?*

*Are there constraints on their availability? If funds are required to acquire them, have these been allocated? Will they be available in time?*

*For example, you might need a specialist lab or equipment at the university, which might be in use in teaching and by other project students. Your own computer and free software, or software you already have, do not normally need to be mentioned.*

My own computer will suffice for programming researching and testing.

# Log of risks

*What are the most likely risks will you encounter when doing your project? What backup plans do you have if identified things go wrong? What is your plan for reviewing risks? Remember that risk probabilities, and hence priorities, will change over the course of the project, so this section should be maintained. Use a table like below.*

|  |  |  |
| --- | --- | --- |
| **Description** | **Impact** | **Mitigation/Avoidance** |
| *COVID-19 outbreak means I cannot get into a lab for usability testing* | *Cause delays to the project timeline* | *Get in while I can, prioritise lab tasks in time. Make an alternate test plan that does not need the lab.* |
|  |  |  |

# Project deliverables

*For an engineering project:*

*What artefacts will be developed?*

A state of the art AI-powered chatbot

*What documents will be produced? This always includes your project report, but could also include supporting documentation for your client such as requirement and design specifications, test strategies, user guides, that are useful outside of the project report.*

Literature review

*For a study project:*

*What documents and artefacts will be produced? E.g. primary research tool, datasets, data analysis and your report?*

# Project approach

*How do you plan to manage your project?*

*What project management tools and/or methodologies are you going to use? Do you need to use an SDLC?*

*What primary and/or secondary research do you need to do? What are the starting points for your research? (e.g. specific books or papers in journals, existing reports or documents, online resources, existing systems)*

# Project plan

*What are the* ***main*** *stages/tasks of your project? For example:*

* *Carry out a literature review*
* *Establish your requirements*
* *Create artefact*
* *Conduct testing*
* *Write the report*

*When are you planning to perform these tasks? When do you need access to other people or resources? What skills do you require and how are you going to acquire those that you do not already have?*

I expect to carry out a literature review by the new year, and establish my requirements by the end of January, from then on, I will be prototyping and testing whilst simultaneously writing the report until May. I expect to have a finished Artefact by the middle of March and the report finished in May. I will require skills in neural networks and AI that I intend to build on during the lead up to my prototyping phase. I intent to acquire these skills through tutorials I have found online and self-study.

# Supervisor Meetings

*What plan has been agreed with your Supervisor regarding supervision meetings over the period of the project? A detailed schedule of meetings is not needed here, but you should have agreed on the frequency of meetings and the mode of meeting (face-to-face where possible, video conferencing, telephone, email, etc). How will your project plan accommodate any extended absences of your supervisor (annual leave, etc)?*

I have agreed to meet with my supervisor to meet once every two weeks or more depending on the state of my project and the results returned from it. My project supervisor and I have decided visits on a rigid schedule do not suit either of us and a more ad hoc meeting structure would benefit us both as it would lead to us only meeting when there are matters to discuss. Our meetings will be face-to-face where possible but there is no issue in conducting them online. Due to our ad-hoc meeting plan any long absences can be made up with proper communication before hand and a log of issues to discuss when we are both available.

# Legal, ethical, professional, social issues (mandatory)

*What are the legal/ethical/professional/social issues that may impose constraints on the project? How will you ensure that they will be addressed, or what steps will you take to avoid/mitigate their effects? What laws must you comply with?*

The obvious social issues are of reduced employment of people in the customer services sector if these improvements are adopted. My project however does not aim to remove the human element in these roles but to augment it. To mitigate this, I will aim to make my artefact a tool that aids humans rather than replaces them.

*Whatever project work you are doing, you must consider its security implications, for the data you generate or use, or for the software artefact itself. Please describe how you are taking these into account. There is also a question about security on the ethics review form (see below)*

**Appendix A: Ethics certificate**

*It is a requirement that you undertake an ethics review. This ensures that you consider the ethical dimensions of your work, and how to protect the human subjects or people affected by your project from harm. All students must complete the ethics review form at* [*https://sums.soc.port.ac.uk/ethics*](https://sums.soc.port.ac.uk/ethics)

**Appendix B: Gantt chart**