SURROUND AI SQUAD 1

AI Literacy Tool

project handover document T2/2020

Project Client

The tribe leader for this project is Chandan Karmakar.

Academic Mentor/Supervisor

The academic mentors for this project are Jonathan Kua and Abbas Kudrati.

Project Team [Data Intelligence Consulting – PG – Surround AI Squad 1 T2 2020]

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# Project Overview

# Surround AI Squad 1 AI Literacy Tool is a web-based platform for children. This project aims to educate school children on the concepts on Artificial Intelligence and machine learning. As technology upgrades and evolves, the product owner expressed his intentions on integrating these modern technological advancements into the regular curriculum of a school-going child through this platform. Furthermore, this project has been developed using Django as the platform, technologies such as Bootstrap, HTML and CSS for the front-end development and python for back-end development.

# The overall goals for this project are as follows:

* Creating a web-platform that educates children on AI concepts
* The platform must be designed to look attractive to the target users (children)
* The learning examples must be interactive and engaging to the user
* It should consist of block-based modelling tools fit for children
* The product implemented must be easy to understand and user friendly

# The deliverables for this project are as follows:

* Design and implement a new website for the AI literacy tool compatible for different screen sizes
* Design the process flow of the website and create a user-friendly experience for the target user
* Implement the age and gender detection example for beginners – Example 1
* Implement the sentiment analysis example for beginners – Example 2

# Document Purpose

This document records the transfer of all the information and artefacts produced during the duration of this Trimester (Trimester 2, 2020). The handover document and delivery package includes the following:

1. An overview of the goals and deliverables for this project
2. Detailed report on the deliverables for each iteration for this trimester (T2, 2020) starting from Iteration 0, to Iteration 2
3. A description of all the planned deliverables for the next trimester derived as a result of iterative group discussions and tribe leader meetings
4. Extensive analysis on the issues faced by the team members and the resolution for the roadblocks
5. The key lessons derived from our learning experience throughout the creation of this project
6. The state of this project described in the form of a high-level view of the architecture of the product
7. Relevant links to the source code, other important artefacts, dependencies and plans
8. User manual detailing the dependencies of the project, the software requirements and how to get the product up and running on your local system. The user manual instructs the user on how to use the product
9. An appendix section which provides all the relevant artifacts and useful addition resources for the project delivered in this trimester

# Completed Deliverables

Please provide a list of product features and/or deliverables, including a brief description thereof, that have been completed so far, either by your Squad this Trimester, or by a previous Squad before this Trimester. Please only include features and/or deliverables that are fully complete – incomplete work is to be listed below. Please explicitly highlight which features and/or deliverables where completed this Trimester and which Squad member(s) were primarily responsible for their completion. Please also clearly indicate where each of the completed deliverables can be found (e.g, MS Teams, Bitbucket repository).

Please refer to project’s Trello board here (if applicable).

# Planned work

Please provide a list of features and/or deliverables that are planned to be completed in the next phase of the project (e.g., next Trimester) as well as features and/or deliverables that your Squad has started this Trimester, but not yet fully completed. The state of each incomplete work item should be briefly described.

Please refer to project Trello board here too (if applicable).

# Open issues

Please provide a list of open issues/challenges in the project, and any investigation that you have conducted so far to resolve them.

# Lessons Learned

Please provide a list of key lessons learned from the project work this Trimester, especially in relation to processes and/or technology you would recommend to be changed in future Trimesters. Please provide a rationale why you think they need to be changed.

# High-level architecture of the product

Depending on the state of the project: please provide a high-level architecture of your project highlighting the key components of the project and how they integrate/talk to each other. Please provide any necessary deployment details.  
  
Note that this may not be applicable to all projects.

# Source code

Please add all necessary details for your project’s source code – links, key components, classes, database components, URLs of online hosted repositories, etc. Please make sure to include your project’s source code in the delivery package if it is hosted on a server outside Deakin.

# User manual

**Getting Started**

This project has a few prerequisites which have to be first installed to set up and run the project.

**Prerequisites**

**Software**

* Python 3.8.5 (64 bit) - <https://www.python.org/downloads/>
* Github Desktop - https://desktop.github.com/
* Visual Studio (64 bit) - https://visualstudio.microsoft.com/vs/community/
* Cmake - https://cmake.org/download/

**Packages**

* pip
* Django
* nltk
* pillow
* cv2 (package name is opencv-python)
* matplotlib
* numpy
* cmake
* dlib

**Setting up the project on your local machine**

1. Clone the repository from <https://bitbucket-students.deakin.edu.au/scm/d2ic-pg/surround-ai-squad-1_2020t2.git>

2. Install the prerequisite software using the links provided above in the software section

3. Packages and modules can be added using the terminal:

* Add using terminal in Visual Studio or command prompt:

pip install <package name>

* Adding the module Pillow   
    
  python -m pip install pillow
* Adding the module CV2

pip install opencv-python

5. Once all packages have been installed, in the command prompt, enter:

python manage.py runserver

6. The link to the website appears once the project has compiled. Access this link to view the project on the localhost.

**How to Use the Application**

1. Home Page
   * The home page consists of a basic introduction to data and AI.
   * There is a description of the concepts of AI brought to life using a practical story without any technical jargon to suit the target users (children).
   * It also contains links to the examples page.
2. Examples Page
   * The overview examples page has the link to three different AI examples, two of which have been implemented for beginners. (Age and Gender and Sentiment Analysis)
3. Age and Gender Example
   * This page consists of the AI example for age and gender detection.
   * Firstly, the user has to click on the “Choose Image” button placed in the box on the left side of the robot.
   * Once an image is chosen, the user has to drag the boxes from the top section and drop them on the robot in the correct order.
   * If the boxes are dropped according to correct description and order, the boxes will align at the bottom and there will be an output image depicting the result of a successful step (on the right side of the robot).
   * This page consists of a reset button in case the user wishes to start over.
   * This page contains a side bar which can be used to switch between different AI examples.
4. Sentiment Analysis Example
   * This page consists of the AI example for sentiment analysis. Firstly, the user has to click on the “Random Tweet” button placed in the box on the left side of the robot.
   * Once an tweet appears, the user has to drag the boxes from the top section and drop them on the robot in the correct order.
   * If the boxes are dropped according to correct description and order, the boxes will align at the bottom and there will be an output image depicting the result of a successful step (on the right side of the robot).
   * This page consists of a reset button in case the user wishes to start over.
   * This page contains a side bar which can be used to switch between different AI examples.

**Additional Resources -**

* To learn more on Django - <https://docs.djangoproject.com/en/3.1/>
* To learn more on Python - https://www.learnpython.org/

# Other relevant documents

Please provide any relevant information not covered in the above sections.

# Appendices

Please include appendices for all artefacts delivered during the course of the project

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