Group Project

DGA3014: Programming and AI Concepts for Artists and Designers

Issue date: 15th November 2023
Deadline: 25th January 2024

Preliminaries

Notes:

- Groups between 3 and 4, at most. An equal contribution will be assumed
- This component is graded out of 100 marks but makes up 60% of the coursework of this study unit.

Deliverables:

- You are required to upload a zip file with sketches and files adequately labelled.
- The zip file name must be your Surname and Name, e.g. BorgJoe.zip
- You can submit one project per group, and the group members' names must be clearly visible on the first page of the PDF document.
- Your documentation is a PDF file of the deck specified below:
    - It needs to include the content described below, clearly showing each section
    - Design and Planning (Include photos from your science book)
    - Overview of your code. (This does not mean copy/paste your program in the PDF documentation. You are expected to discuss the key components of your program and report any difficulties that you might have encountered while also reporting how you overcame them. You are also expected to document the main programming concepts you have used to deliver the results.
    - Usage instructions for your code. (Provide brief, simple and straightforward instructions on how to use your program)

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Project Specifications

Imagine a physical exhibition where different installations or exhibits are presented to the public. The theme is activism, aiming to create artistic installations that include artificial intelligence to instil interest in the subject.

Your task is to plan and design (not implement) a single installation that would interactively provide visitors with insights and knowledge about the topic of choice. Visitors would be introduced to the technology, what it is, and why it is helpful while they would also feel they learnt something. The installation needs to deliver an artistic message about an aspect of activism. This can be related to nature protection, democracy, traffic, media and so on. The installation can transmit activism by either highlighting a challenge we face in society or highlighting a beautiful aspect we must protect.

Different AI technologies include object detection, object segmentation, pose estimation, creation of art, style transfer, facial detection, and facial recognition, among others. You are free to choose any topic from this list or any other. If it is not on this list, you should ask for the lecturer's feedback before committing time and effort to work on it.

Example (that cannot be used): Ms Elena Said presented her work about using Object Detection in an artistic installation. Her project aims to use object detection to detect cranes from images of Maltese landscapes to highlight the problem of overdevelopment. The installation would then generate or modify music depending on the number of cranes visible in the image. This can be packaged in an installation where visitors walk into a space surrounded by monitors and a terminal to choose or upload images of the Maltese landscape. The system would instantly process the image and generate music while displaying different images previously uploaded or chosen by other visitors. Upon leaving, visitors can pick up a flyer to learn about its technology or scan a QR code and be taken to a page displaying the same content.

1. **Slide Deck**
    a. The slideshow should not be less than 20 slides and not longer than 35 slides submitted as a PDF file.
    b. The document should include at least the following in the style and order of your choice:
        i. ~~Provide the artistic theme you're working on and a brief background.~~
        ii. ~~Provide the AI topic you're working on and a brief background.~~
        iii. ~~Explain and demonstrate how artificial intelligence can help deliver the theme's message.~~
        iv. ~~A 100-word abstract of the project.~~
        v. ~~The plan elevation of the installation and some other potential elevations.~~
        vi. ~~A visual mockup of what the installation would look like. This can be done using snippets from other installations that can act as guidance or inspiration. You are also encouraged to use generative AI to create mockups.~~

vii. ~~A flow chart or block diagram of how the experience will take place, highlighting how the visitor will interact with the installation.~~
viii. ~~A Processing sketch that will make the installation interactive. You are not expected to include AI in this sketch, but it should be interactive, themed and branded to fit with the installation. It can serve as a mockup or as an active part of the installation by providing instructions or filling part of the experience.~~
ix. ~~A 3-fold brochure the visitor will take with her/him after the experience.~~
x. ~~An estimate of the hardware and physical setup needed, supported by a basic financial indication of its costs by obtaining prices from websites and referencing them accordingly.~~
xi. ~~An outline of the overall budget for the setting up of the installation that includes printing, decorations or any other expenses.~~

c. Maximum of 100 marks, organised accordingly:
   i. 10 marks for topic and background
   ii. 10 marks for explaining its relationship to AI
   iii. 10 marks for the design, flow and mockup of the installation
   iv. 20 marks for the brochure
   v. 30 marks for the Processing sketch.
   vi. 10 marks for the costings and budget
   vii. 10 marks for the documentation and quality of the proposal

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