CPT208 Report (Group Work)

Module Name: CPT208 Human-Centric Computing

Module Leaders: Dr Yue Li and Dr Teng Ma

Marks: 15% of the module mark

Learning Outcomes Addressed

A. Recognize the issues involved in designing computer systems for people including an understanding of the relevant legal, social, ethical and professional issues.

B. Demonstrate an understanding of the basic formal methods and techniques for interaction design.

C. Develop technical skills required for the implementation of interactive systems.

D. Critically evaluate interactive systems.

E. Demonstrate an understanding of the methods and issues involved in deploying interactive systems to meet business goals.

Submission Format

- **Only one submission** is needed from each group for group work.

- Naming formats and examples:

    o CPT208_Group01_Poster.pdf

    o CPT208_Group01_Presentation.zip

Project Theme – **Generative AI in X**

Generative Artificial Intelligence (AI) has emerged as a transformative technology, capable of creating new content, designs, and solutions across a wide range of domains. From generating text, images, and music to designing complex systems and solving real-world problems, generative AI is reshaping how we interact with technology and approach creativity.

In this group project, please explore the theme of "**Generative AI in X**," where "X" represents a specific domain or application area that can benefit from the capabilities of generative AI. You will work collaboratively to design, prototype, implement, and evaluate a solution that leverages generative AI to address a human-centered problem.

The goal of this project is to create a system or tool that not only demonstrates the technical capabilities of generative AI but also emphasizes its potential to enhance human experiences, solve practical challenges, and improve accessibility, creativity, or efficiency in a chosen domain. You are encouraged to think critically about the ethical implications, usability, and societal impact of your solutions, ensuring that the technology aligns with human-centric design principles.

Here are some examples of "X" (Potential Domains for Generative AI Applications):

1. **Generative AI in Education**: Developing AI-powered tools to create personalized learning materials, generate practice questions, or design interactive educational content tailored to individual student needs.
2. **Generative AI in Healthcare**: Creating systems that generate appropriate motivations for people to keep healthy, assist in diagnosing conditions, or design personalized treatment plans.
3. **Generative AI in Cultural Heritage**: Developing tools that promote, restore, and reimagine cultural heritage in innovative ways, making it more accessible and engaging for future generations.
4. **Generative AI in Creative Arts**: Building tools that generate music, visual art, or storytelling content, enabling artists to explore new creative possibilities or collaborate with AI.
5. **Generative AI in Gaming**: Designing AI systems that create dynamic game environments, characters, or narratives, enhancing player immersion and engagement.
6. **Generative AI in Accessibility**: Developing solutions that generate alternative text for images, create sign language animations, or design accessible interfaces for individuals with disabilities.

Through this project, you will gain hands-on experience in applying generative AI techniques, such as large language models (LLMs), generative adversarial networks (GANs), or variational autoencoders (VAEs), to real-world problems. By focusing on human-centric design, you are expected to create solutions that are not only technically innovative but also meaningful and impactful for end-users.

Report – Group Presentation and Poster (15% of the module mark)

This is **a group coursework** with a peer assessment of individual contributions.
Due Date: 2025.04.07, Monday, Week 8

Prepare a poster and deliver a 5-minute presentation for the Demo Day. These tasks are designed to showcase your understanding of generative AI, your project's design and implementation, and its human-centric impact. The presentation is your opportunity to communicate your project's goals, methodology, and outcomes to an audience of peers and instructors. It should be clear, concise, and engaging, highlighting the key aspects of your work.

Your poster should include the following sections:
0. **Title and Team Information**:
    - Include a clear and catchy title for your project.
    - List the names of all team members and the module information (CPT208).
1. **Introduction and Problem Statement**:
    - Briefly describe the domain (X) and the specific problem or opportunity to address.
    - Explain why this problem is important and how it relates to human-centric computing.
2. **Design and Methodology**:
    - Describe the target users and their key requirements.
    - Present the design alternatives that you considered and justify your choices.
    - Include diagrams or flowcharts to illustrate your design process and system architecture.
3. **Implementation and Outcomes**:
    - Showcase key features of your prototype or solution.
    - Include visuals such as screenshots, generated outputs, or graphs to demonstrate your results.
4. **Evaluation and Impact**:
    - Summarize how you evaluated your solution and the key findings.
    - Highlight the human-centric impact of your project (e.g., improved accessibility, enhanced user experience, or societal benefits).
5. **Conclusion and Future Work**:
    - Briefly state the outcomes and limitations of your project.
    - Suggest potential future improvements or extensions.
6. **References**
    - Include a reference list of the academic literature you cited.

Tips for preparing the poster:
- Use a clear and logical layout with sections that are easy to follow.
- Keep text concise and use bullet points where possible.
- Use high-quality visuals (e.g., images, charts, or diagrams) to make your poster engaging.
- Ensure the poster is visually appealing with a consistent color scheme and font style.

Tips for preparing the presentation:
- Use visual aids (e.g., images, diagrams, or videos) to support your explanation.
- Practice timing to ensure you stay within the time limit.
- Speak clearly and confidently, and be prepared to answer questions from the audience.

Note that presentation slides are not compulsory, but feel free to bring an iPad, laptop, or any other materials if you want to present any additional information (e.g., interface mockups, live demos, physical prototypes, etc.).

Report Marking Criteria

Criteria	Excellent (70+)	Good (60-69)	Satisfactory (40-59)	Needs Improvement (0-39)
Content and Delivery (30%)	Clearly states project motivation, aims, and objectives; specifies and studies the target user group; extensively researches and summarizes key issues; demonstrates an iterative design process; in-depth understanding of the project novelty, contribution and potential impact.	States project motivation and aims; specifies target user group; conducts some research on existing works; shows some iterative design process; good understanding of the project novelty, contribution and potential impact.	Vaguely states motivation and aims; limited specification of target user group; minimal research; unclear iterative design process; basic understanding of the project novelty, contribution and potential impact.	Fails to state motivation or aims; does not specify target user group; lacks research; no evidence of iterative design process.
Task Fulfilment (30%)	Strong efforts in collecting design requirements; reasonably large sample size; proposes effective and novel design solutions; includes various prototypes; shows rich evaluation results of existing design and/or proposed design solutions.	Collects design requirements; acceptable sample size; proposes some design solutions; includes a few prototypes; presents basic evaluation results.	Limited collection of design requirements; small sample size; proposes generic solutions; few prototypes included; minimal evaluation results.	Fails to collect design requirements; lacks design solutions; no prototypes; no evaluation results presented.
Clarity and Organization (20%)	Clear arguments with relevant points; well-paced presentation; presentation and poster are structured in a logical way, with very clear key points; poster is clear, readable, and uses suitable visual aids effectively.	Mostly clear arguments; presentation is generally well-paced; reasonably clear structure and key points; poster is readable with some visual aids.	Some clarity in arguments; presentation pacing is inconsistent; poster is somewhat readable but lacks effective visuals.	Poorly organized arguments; difficult to follow presentation; poster is unclear and lacks visual aids.
Answers to Questions (20%)	Well-prepared for questions; provides thoughtful and responsive answers; handles questions knowledgeably and confidently.	Prepared for questions; provides adequate responses; handles questions reasonably well.	Some preparation for questions; responses lack depth; struggles with some questions.	Unprepared for questions; provides vague or incorrect responses; unable to handle questions effectively.

University Policy on Late Submissions

If you submit coursework after the deadline, you will be penalized:

- **5%** of the total marks available for the assessment will be deducted from the assessment mark for **each working day** after the submission deadline, up to a maximum of 25%;

- Coursework received **more than five working days** after the submission deadline will receive a mark of **zero**.

University Policy on Academic Integrity

The University aims to foster a learning environment which produces students who embrace academic integrity, understand that they must produce their own work, are able to acknowledge explicitly any material that has been included from other sources or legitimate collaboration, and to present their own findings, conclusions or data based on appropriate and ethical practice.

The University will support you to understand the standards of academic integrity, while you are responsible for learning and upholding professional standards of research, writing, assessment, and ethics in your area of study. Violation of academic integrity comes in many forms, including but not limited to the following:

- improper citation or referencing;

- unauthorised collaboration with another person in the preparation and production of a submitted work;

- copying directly from other persons without their knowledge as your own work;

- submitting all or part of the same academic work for two or more modules without permission;

- consciously representing another's work or concept as your own without proper acknowledgment and citation of the sources;

- altering data obtained by legitimate means or making up a portion or whole set of data and reporting them in your own assignment;

- requesting another party to prepare all or part of an assignment (with or without payment) on your behalf.

Any violation of academic integrity is a serious offence and is therefore subject to an appropriate penalty. According to the individual case and the seriousness of the offence, penalties applied will vary and may include one or a combination of the following:

- a written warning;

- a mark penalty or a zero mark for the assessment;

- a zero mark for the module;

- a note on student's records;

- suspension of studies;

- termination of studies.

In addition to the respective penalty imposed, you may also be given feedback on how to avoid further offence in future work.