Final Year Project Proposal Guidelines

- A cover page containing the following:
  - The project title : Choose a clear and concise title for your project.
  - Your name and registration number
  - Course code and course name
  - Date of submission
  - Name of your Supervisor (s)

- **Abstract** : An abstract that provides a summary of your project (200 to 300 words) (on a new page)

NB: Work closely with your Supervisor (s) to develop your proposal

Contents (on a new page)

1. Introduction (on a new page)

1.1. Motivation / Background

- Provide a detailed overview of the project
- What is the motivation/vision?
- Social impact: Why is the project you are proposing important at this time [consider to the community/ business /country's developmental visions]
- Consider real - world problem solving: authentic situations with real people, actual data

1.2. Statement of the Problem/Opportunity

- From the background , clearly state the problem / opprortunity your project aims to address

1.3. Proposed Solution

Provide a description of your solution from a computing perspective: This description should include the direction or design/solution space that you envision for your project, with a positioning in state-of-the art work (see state of the art below).

- What are you proposing to design/develop?
- What do you envision (consider using a diagram to visualize you of the idea)
- Area of research : For example … Machine learning, human-centered design, augmented reality, wearable computing, blockchain, eye - tracking, robotics, mobile applications, IOT,, Security , Data analytics, Networks, Serious games etc.
- Tools and technologies to apply

NB: Consult with the department to know what specialized equipment/ tools [e.g., GPU, Robot, IOT equipment , VR] are available for you to use in your projects

NB: Work with your supervisor closely to develop your proposal

1.4. Objectives

1.4.1. Main Objective

- Include the Main Objective of your project: What do you aim to achieve?
- Note these should be computing goals (
- The Objectives should be SMART

1.4.2. Specific Objectives

- **Note** the Specific Objectives should add to your Main Objective: Consider specific objectives as breakdowns or subgoals to achieve your main or overall project objective.
- List the **Specific Objectives** as follows :

i). To investigate the application of machine learning techniques applications in …
ii). To design…
iii). To develop…
iv). To evaluate ….

2. State of the Art/Review of Significant related works (on a new page)

In this section, provide a summary of relevant/ related works /literature to your project.. You need to download a few articles related to the topic you are working on (e.g., other works about the application of machine learning applications in health) and come up with a summary describing the state of the art in your area of interest:

- Include related work/previous /ongoing research in your area of focus:
- What is emerging in the area of interest ?
- Gaps : Identify any gaps or limitations in the current state of art
- Provides a clear description of different perspectives and potential approaches
- Ensure you cite the articles and reference external sources correctly (Follow APA referencing style)
  - Consider using any of the following citation tools: Mendeley (free), Endnote etc.
  - Check with the **Library** to know the digital resources (journals, conference papers and books etc.) that you can access
- Note : only include references from recent works(from 2013 to 2023) unless you are defining a term/theoretical concept

3. Approach/ Methodology (on a new page)

3.1. Description

- Provide a description of your approach ; how you are going to carry out your project : step-by-step approach you plan to use to achieve your project objectives:

3.2. Technologies

- Discuss the technologies, platforms or tools you will utilize for implementation
- Explain the specific techniques, algorithms, programming languages you will use

3.3. Data

- Discuss the data collection process if you plan to use primary data sources
- For secondary data indicate the data source - datasets, preprocessing, analysis, or any experimental procedures involved

3.4. Evaluation /Testing /Validation

- Explain the testing procedures and methodologies you will use : test data
- Explain the metrics / measures to use to evaluate the success/ performance of your solution
- Discuss any experiments, simulations, or user studies you plan to conduct.

3.5. Expected Outcomes

- Describe the intended outputs/ outcomes and results /deliverables of your project.
- Highlight the potential contributions, innovations, or advancements your work can offer.
- Discuss the real-world applications of your solution

3.6. Ethical Considerations

- Identify any ethical concerns / risks associated with your project, such as (e.g., trust, privacy, economic impact, bias)
- Discuss the measures you will take to ensure the ethical handling of data and compliance with regulations (if necessary)

4. Conclusion

- Recap the key points of your proposal/project
- Highlight the implication and potential of your project

5. References (on a new page)

- All content in your document should be well referenced: For references and citations adhere APA Citation Style Guide.
- In the text, include precise references to relevant sources. Basically, it should be clear to the reader what the source is of every piece of text:
  - a literal quotation (enclosed by quotation marks);
  - a rephrasing of text from one or more sources (provide references)
  - The figures and tables that are not your own work should be well labelled and referenced

Some examples of referencing following APA: (In text)

- Prior work in human-robot interaction has shown that gaze can help build effective interactions between humans and robots (Admoni and Scassellati, 2017; Broz, Lehmann, Nakano, and Mutlu, 2012; Ruhland et al., 2015).
- Admoni et al. (2016) demonstrated how to achieve effective interactions with robots using nonverbal in various domains, for example, robot tutors, robot therapists, and robot coaches.
- Huang and Mutlu (2013) developed a toolkit to generate useful social behavior for robots to achieve positive outcomes in an educational setting.

List of references based on the above text citations

1. Admoni, H., and Scassellati, B. (2017). Social eye gaze in human-robot interaction: A review. *Journal of Human-Robot Interaction*, *6*(1), 25-63.
2. Admoni, H., Weng, T., Hayes, B., and Scassellati, B. (2016). Robot nonverbal behavior improves task performance in difficult collaborations. In *2016 11th ACM/IEEE International Conference on Human-Robot Interaction (HRI)* (pp. 51-58). IEEE.
3. Broz, F., Lehmann, H., Nakano, Y., and Mutlu, B. (2012). Gaze in HRI: from modeling to communication. In *Proceedings of the seventh annual ACM/IEEE international conference on Human- Robot Interaction* (pp. 491-492). ACM.
4. Huang, C. M., and Mutlu, B. (2013). The repertoire of robot behavior: Designing social behaviors to support human-robot joint activity. *Journal of HRI*, *2*(2), 80-102.
5. Ruhland, K., Peters, C. E., Andrist, S., Badler, J. B., Badler, N. I., Gleicher, M., ... and McDonnell, R. (2015). A review of eye gaze in virtual agents, social robotics and hci: Behaviour generation, user interaction and perception. In *Computer Graphics Forum,* 34 (6), 299-326.

6. Appendices (on a new page)

Appendix 1: Plan and Timeline

- Provide a detailed project plan that includes tasks, milestones, and deliverables.
- Consider using tools like Gannt Chart (or other tools) to visualize your schedule – task breakdown for the next one year
- Break down the timeline for each stage of the project. : State of the Art, System Analysis, System Design, System Implementation / per semester,

Appendix 1 Budget

- Identify the resources required for your project, such as hardware, software, or datasets.

The proposal document should be well formatted, and easy to read (select a good font and size):Spell check and grammar check your text.