Group Meeting #1

📅 **Date:** 7 March 2025

⏰ **Time:** 3:30 PM or later

📍 **Location:** Discord server

🎯 **Agenda:**

1. Brainstorming Session (using Design Thinking framework)

• **Empathize:**

- Identify real-world problems needing AI/software solutions.
- Discuss issues and user pain points.

• **Define:**

- Narrow down the problem statement.
- Ensure the problem is feasible, impactful, and tech-driven.

• **Ideate:**

- Generate AI/software-based innovative solutions.
- Evaluate practicality and ethical concerns.

2. Assignment 1 Submission Template

3. Group Agreement

4. Next Steps & Action Items

• Assign responsibilities for further research and validation.

• Set up a follow-up meeting for refining selected ideas.

• Confirm deadlines for project milestones. (Gantt charts?)

• Ask in Week 2 tutes for feedback on selected topic

• Next meeting:

11 March 2025, 2:30 pm

14 March 2025, 3:30 pm

📝 **Meeting Minutes:**

1. Brainstorming topic

Own topic

Design technical solutions that detect indoor air quality inside old aged care residences. (Q)

- Address air quality issues, real-time monitoring, proactive strategies
- Need IOT sensors for real time detection but unsure how to prototype the sensor, potentially complex
- Target user: Old folks in aged care

A detector for determining freshness of a consumables based on user inputs (Daniel)

- Address global food waste issue, could save food if still viable to eat
- Need pre-trained AI (vision?/multimodal?) model potentially trained on very large food database
- Would exclude smell which is a crucial factor
- Target user: General population?/ busy executives?

Diary that you can write anything and use NLP to analyse your mental state/wellbeing (Kevin)

- Address early detection on potentially mentally afflicted people, or improve mental wellbeing and mindfulness
- Long waitlist and expensive mental health treatment/consultation
- NLP need really good metrics (like low false alarm)
- Target user: Young adults/students
- Ideas: Enable image features for selfies

Listed topic

Support circular economy by efficiently separating items for donation or waste

- Address donation center logistic head cost and protect environment

- Tricky to capture the quality just by using images
- Target user: donation center

Selected topic: **AI-Enhanced emotion detection and mental health support platform that you can write anything and use NLP/Computer Vision to analyse your mental state/wellbeing**

Potential Innovation:

1. NLP - sentiment analysis
2. Computer Vision - facial expression analysis/microfacial movements
3. Time series/ RNN/ LSTM - speech analysis
4. Biometric data sensor
5. Behavioral pattern analysis - from keystrokes dynamic/ rate of writing

Rephrased topic: AI-Enhanced Multimodal Emotion Detection and Mental Health Support Platform for University of Melbourne students.

Part A Deliverables:

1. 300 word overview of topic including references (Daniel)
    1. Explain why problem is important/problem statement
    2. Key concerns/challenges
    3. Evidences/references

2. Identify users and stakeholders (Q)
    1. Users: young adults/students/ (focus: unimelb students)
    2. Stakeholders: psychologists/counsellors/healthcare firms/parents/professors/student organizations/ (focus: student support staff)

3. Identify task and goals (Kevin)
    1. Goals: Early, accessible detection and treatment
    2. Challenges from achieving goals:
        i. Cultural differences/expectations, different way of coping

        ii. Cost

4. Technologies with references (Q)
    1. User have access to:
        i. Social media
        ii. Internet browsing
        iii. What is the limitation?
    2. Existing:
        i. MindShift (reference)
        ii. Calm (reference)
        iii. What is the limitation?

5. Innovations (can be a bit later) (Kevin)
    1. Brainstorm the innovation
        i. NLP + Image detection model

Part B Deliverables:

1. Rough outline how to investigate problem (Kevin)
    1. Gather references on: (all)
        i. using apps for mental health
        ii. how student tackle mental health issue
        iii. how the AI reliably detect emotion for reading
    2. Then, list some key questions (to be added):
        i. The willingness of student to engage with digital mental health apps/solutions

2. Risk, constraints, and mitigation (Q)
    1. Risk:
        i. Privacy issue
        ii. AI reliability and credibility
    2. Constraint:
        i. User acceptance

        ii. Apps deployment process
    3. Mitigation:
        i. Frequent meetings
        ii. Effective communication

3. Milestones (Daniel)
    1. Show time planning and maybe identify process
        i. Gantt chart or something

Part C Deliverables (All)