1. **Project number**: S20-60

2. **Project title (as will appear on the poster)**: Smart Goggles

3. **Team members**: Tatsat Vyas, Max Davatelis, Zain Sayed & Andrew Koskinen

4. **Adviser(s) name(s)**: Dr. Kristin Dana

5. **Up to 5 keywords that will help to classify the project scope**:
   Smart Goggles, SLAM, Object recognition, Depth measurement, YOLO

6. **Project abstract (up to 250 words) to be shared with judges**:

   **Overview**
   Our project focuses on utilizing the technologies available today to help people with mental illness such as prosopagnosia, Alzheimers and old age memory loss as well as people with complete vision loss. We are trying to develop a technique that can record the faces of the people that a person meets and informs the person who they are. In addition, it can also help the user navigate through the environment and alert them of any objects on their route. The goal of this device is to assist people with any type of vision or memory loss.

   **Goals/Objectives**
   1. Using face(and even speech) recognition to put names to faces and recording necessary details about the person.
   2. Navigate indoors and outdoors using the cameras built in the goggles.

   **Model/Approach**
   This project will consist of three major components: image capture glasses, accompanied android app, and cloud storage system.

   - The glasses will be modeled using standard glasses frames, a microcontroller, and a camera compatible with the microcontroller. The microcontroller will be responsible for capturing facial data and further image processing.
   - The android app’s main responsibility is to consolidate the image samples while providing an interface for the user to interact. This also ensures a consistent internet connection for the entire system.
   - Use previous data stored via cloud storage and cloud computing to match faces and return facial data to the app for the user to interact with. Further encounters with the same faces will strengthen the detection system.
Milestones

- Implementing computer vision and image processing
- Creating a mobile application, using the phones and google’s Bluetooth capabilities to transfer data.
- Connecting the mobile app to the external camera and implementing real-time face recognition from the test data.
- Setting up the cloud data set and transferring data on the mobile app to cloud service.
- Run face recognition tests with the dataset on AWS. take notes about the improvement and the size of the dataset needed.