CS124 Honors Project MVP

4-Week Goal

Develop a live-feed person identification and heat-mapping system.

End Goal

Enable real-time characteristic recognition and analytics, with the ability to filter by traits such as age, gender, and demographic.

Core Objectives

1. **Person Identification:** Detect and track individuals from live or recorded video feeds.
2. **Heat Map Generation:** Visualize crowd density and movement patterns.
3. **Characteristic Identification:** Extract and classify features such as age, gender, and demographics.
4. **Analytics Dashboard:** Provide searchable, filterable insights based on identified traits.

Team Structure and Responsibilities

Group 1: Video Ingestion and Model Integration

Members: Tarang, Ken
Responsibilities:

- Import and process live or recorded video feeds.
- Integrate Google DeepMind's Gemini 2.5 Pro model for person detection and tracking.
- Optimize inference for real-time performance and accuracy.

Group 2: Characteristic Extraction and Web Platform

Members: Bricen, Abdullah, Boqiang
Responsibilities:

- Develop pipelines for characteristic recognition (age, gender, demographics).

- Build a front-end dashboard or website for live visualization and data exploration.
- Implement filtering and search functionalities.

Group 3: Data Analytics and Heat Mapping

Members: Stephen, Quincy
Responsibilities:

- Generate and visualize real-time heat maps showing movement and density.
- Build analytics modules (frequency, dwell time, area heat zones).
- Connect analytical insights to the website interface.

Timeline

Week	Key Activities
1	Environment setup, role assignment, base video pipeline integration.
2	Implement person detection with Gemini 2.5 Pro; collect and test data.
3	Add characteristic classification and heat-map generation.
4	Develop the analytics dashboard, integrate all components, and finalize the demo.