

Facial Micro-expression Analysis

Android Mobile Application for Tele-consultation

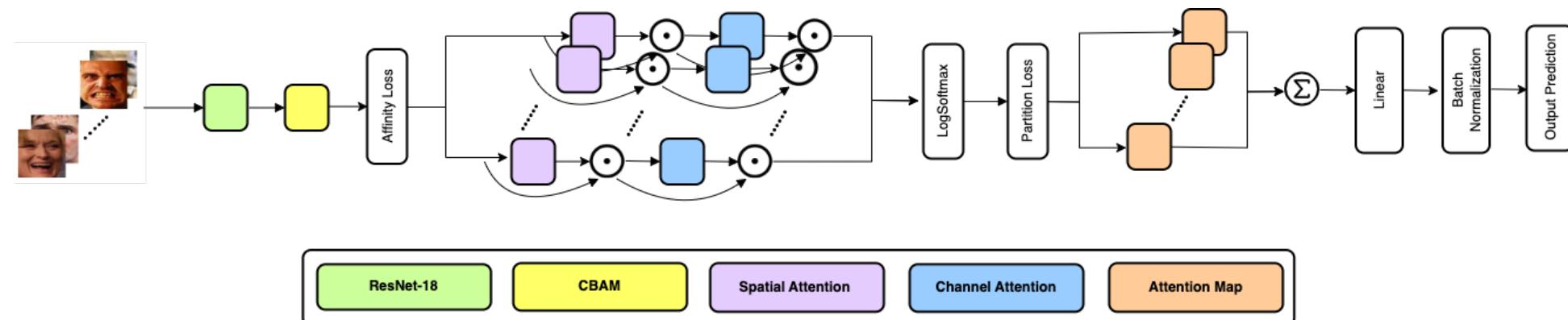
Student: Ong Si Ying Supervisor: Professor Zheng Jianmin

Project Objectives:

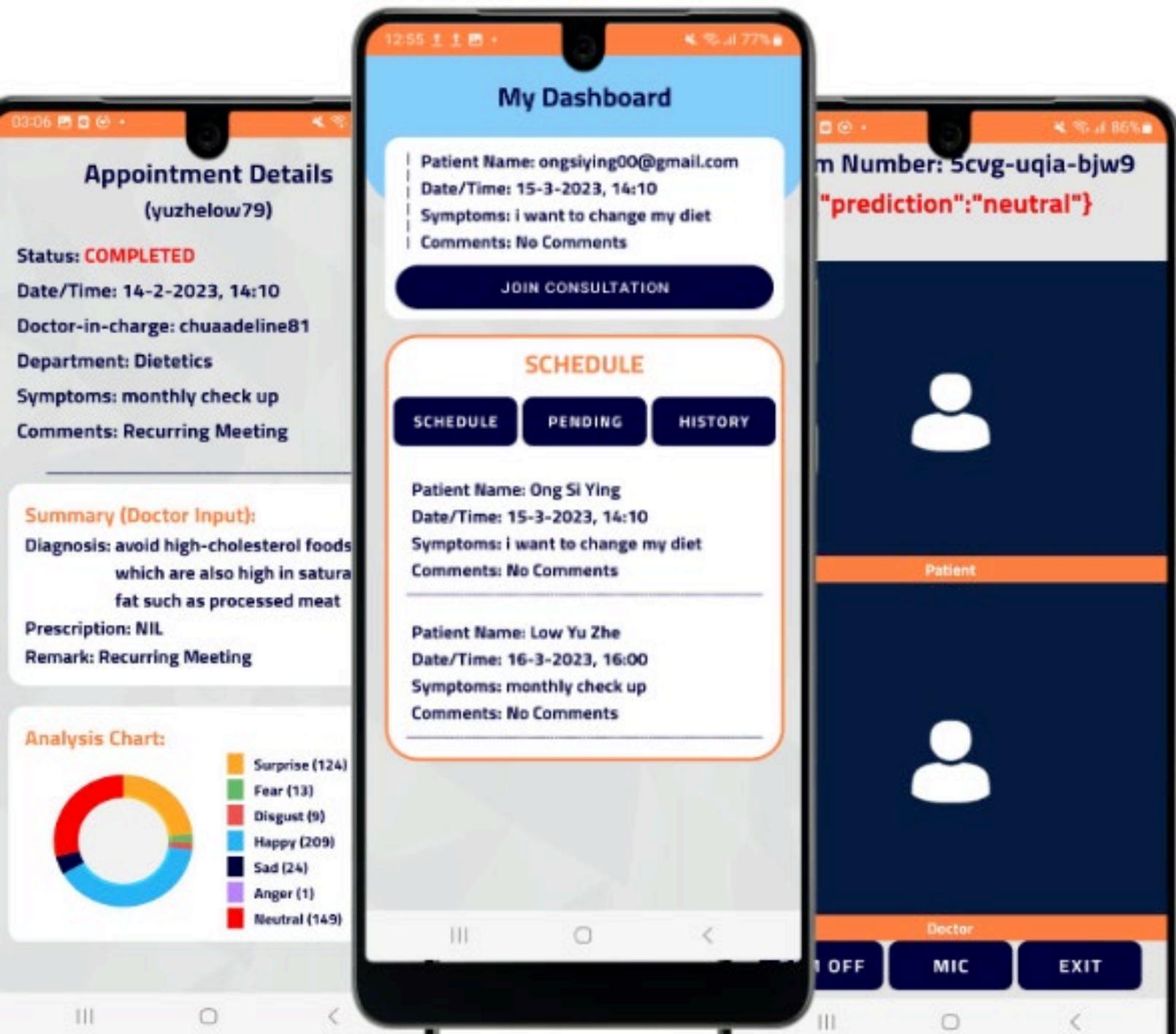
The objective is to develop a real-time Android mobile application that incorporates neural network models into teleconsultation settings and accurately recognizes facial micro-expressions.

To achieve a reputable performance for the application, extensive research and development on various facial micro-expression implementations was performed, as well as the creation in a person's facial expression that may indicate a specific medical condition or the person's emotional states.

CBAM Advanced Attention Network (C-AAN)



C-AAN introduces the CBAM attention mechanism to improve the most crucial image characteristics output by a ResNet-18 model. The output is then fed into four parallel streams of spatial and channel attention to determine class confidence, yielding an accuracy of 0.81.



MedFER Mobile Application

MedFER facilitates tele-consultation between physicians and patients, by monitoring the patient's emotions in real-time. Following each tele-consultation, statistics generated from C-AAN model on the patient's emotions is consolidated as insightful data, allowing the physicians to analyze them while the patients wait for their diagnosis and prescriptions to be entered into the system and made accessible to them.