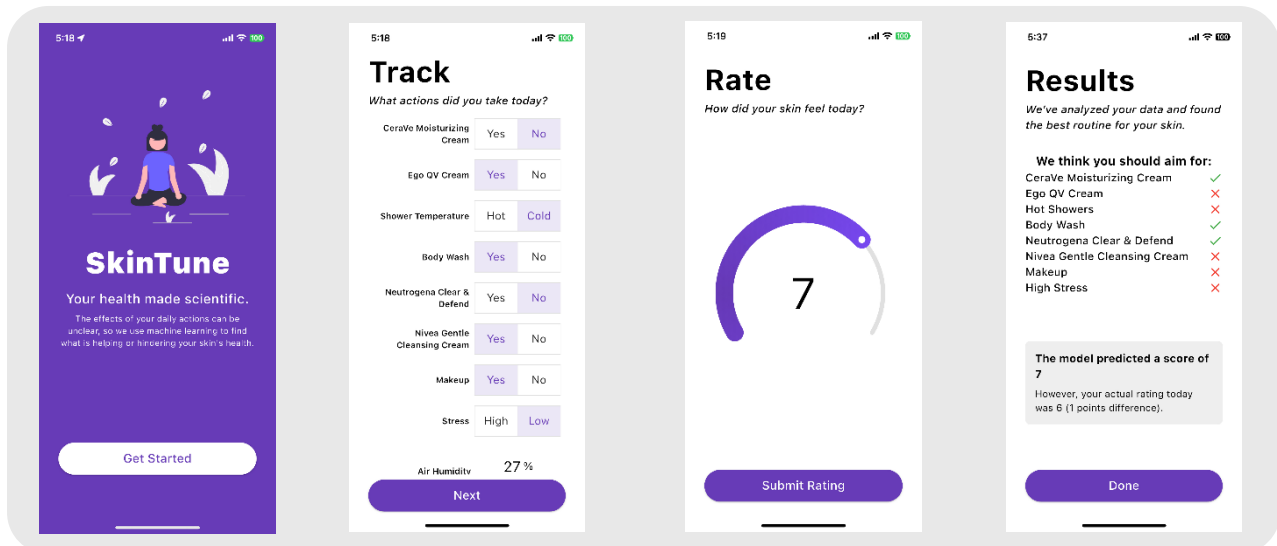# SkinTune

A Cloud Hosted, Serverless, Neural Network

Team 29

Modern healthcare is stressful. Making appointments takes time, money and often results in multiple follow-ups; one of the most common causes is for skin-checkups. There are a plethora of reasons for skin issues and having multiple possible triggers exponentially increases the difficulty in finding the true underlying causes. Our app provides a stochastic-gradient-descent, neural network modal with a dynamic learning rate to provide rapid and precise results, allowing customers to find tailored treatments whilst minimising mundane medical appointments, reducing stress on the healthcare system holistically.

SkinTune's demographic are people who have mild-moderate skin issues that would typically require multiple consultations to find a somewhat trivial solution. This app removes the need for professional opinions, which often results in guesswork regardless. Passively take charge of your health by spending less than one minute a day journaling your schedule and let SkinTune help find your tailored treatment.

Upon entry, the user is prompted to rate their day on several metrics relevant to skincare. Next, the user enters how their skin felt at the end of the day. Then, on the popular hosting framework, *Heroku*, the team has created a custom API which the application uses to send data to the neural network hosted in the cloud. Through the popularised-modern method of machine learning, stochastic-gradient-descent, the SkinTune model learns external factors that impact consumers skin-health and compares its predictions to user input. This network accounts for all previous data including a random start, which allows for subtle, not easily capturable, changes to be accounted for. Results are displayed to the user through the friendly interface:

The application can even already be prototyped on physical mobile devices. SkinTune will remove stress upon consumers in healthcare as they will need to attempt less treatments before finding adequate medicines and holistic solutions. Further, less medical appointments will be required from consumers, resulting in decreased expenses and consequently, increased vacancies at clinics.