Project Title: Classification of Arrhythmia by Using Deep Learning with 2-D ECG Spectral Image Representation

Project Design Phase-I - Solution Fit Template

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Define CS, fit into CC

1. CUSTOMER SEGMENT(S) CS

- Patients looking forward to know about their class of arrhythmia. - For users who want to be self-reliant without any medical equipment. - Also Doctors / clinical experts who want automated methods to improve the clinical diagnosis and treatment of some of the major CVDs

6. CUSTOMER CONSTRAINTS CC

- have to know basic image uploading skills. - have a cell phone / laptop. - have a Gmail / Google Account. - have proper images and medical records.

5. AVAILABLE SOLUTIONS AS

- using a tiny, portable ECG recorder for
The typical detection period is 24 hours or more, which
Users believe it to be time-consuming.
Traditional clinical laboratory testing without the use of any CVD-related automation systems.
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Explore AS, differentiate

Focus on J&P, tap into BE, understand RC

2. JOBS-TO-BE-DONE / PROBLEMS J&P

-People are curious about the outcomes of classification despite the fact that they don't
possess the ability to take timely action remedies as soon as is practical.
- Individuals, users, and patients desire to share their reports to medical professionals and their recommended providers for additional direction that needs to be followed.
- Individuals worry that their results will be negative.
are true and appropriate categorization is carried out using using automated systems, as well sharing of personal information privately through way of websites.
- People want to conform quickly. anyplace, at any time, with just one thing the photographs taken during tests.

9. PROBLEM ROOT CAUSE RC

- They must conduct many ECG tests, which not even be accurate under conventional techniques.
- Have to wait for long hours for the test results done in Clinical labs by experts were there are proven to be human errors in classification.
- Inadequate upkeep of patient records in hospitals, laboratories, and resulting in Patient document privacy concerns being released to the public under health care institutions.
- Clinical professionals may need to examine ECG records taken over a longer time time for cardiac arrhythmia detection.

7. BEHAVIOUR BE

- People employ various techniques for strategies for classification under the medical professionals' and clinical experts' advicethere are no automatic treatments for arrhythmia systems that are primarily used in daily life.
-Some even avoid taking exams because they are expensive and requires a lot of time underneath experimenting results in subpar testing outcomes preventing early intervention possibly in some circumstances.

Focus on J&P, tap into BE, understand RC

3. TRIGGERS TR

Common triggers for an arrhythmia are viral illnesses, alcohol, tobacco, changes in posture, exercise, drinks containing caffeine, certain over-the-counter and prescribed medicines, and illegal recreational drugs. The most common type of arrhythmia is atrial fibrillation, which causes an irregular and fast heart beat. Many factors can affect your heart's rhythm.

4. EMOTIONS: BEFORE / AFTER EM

People / patients / users did feel reliable and efficient with traditional ECG methods so automated systems and the web application goal is to change it!

People with be having result classified quickly with more accuracy without taking longer periods of time waiting for treatments.

10. YOUR SOLUTION SL

to propose a 2-D CNN-based classification model for automatic classification of cardiac arrhythmias using ECG signals.

to make a web application as reliable as possible for the user/patient to fed his image into the model that is trained and the cited class is displayed on
the webpage

to help experts diagnose CVDs by referring to the automated classification of ECG signals.

to further improve experimental cases.

enhancing the accuracy of diagnosis algorithms in the fusion of medicine and modern machine learning technologies.

8. CHANNELS of BEHAVIOR CH

8.1 ONLINE

Social media results regarding automated web application create awareness for other users on the efficiency and reliability about the automated classification of cardiac arrhythmias and also Expert advertise online test proofs.

8.2 OFFLINE

Word of mouth among users, clinical experts, patients and people in the society.