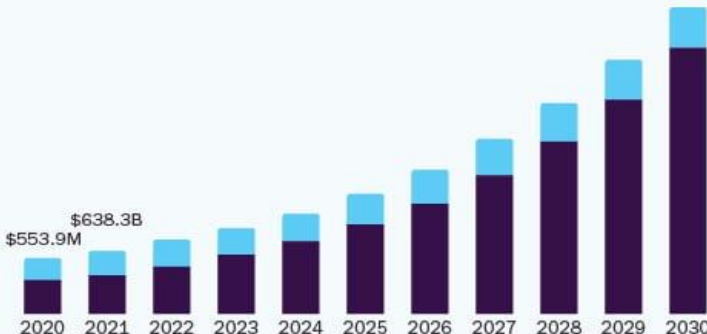


Project Design Phase-I Proposed Solution Template

Date	1 st October 2022
Team ID	PNT2022TMID44944
Project Name	Project-Classification of Arrhythmia by Using Deep Learning with 2-D ECG Spectral Image Representation
Maximum Marks	2 Marks

Proposed Solution Template:

S.No.	Parameter	Description																																																
1.	Problem Statement (Problem to be solved)	<ul style="list-style-type: none">To make the ECG system in fully automated manner to reduce workTrain the model using more dataset to classify the waveforms accurately																																																
2.	Idea / Solution description	<ul style="list-style-type: none">Automated process of feature detection and extraction in providing concise and accurate results, which thusly delivered an allure in the space of heartbeat classificationHolter monitor																																																
3.	Novelty / Uniqueness	<ul style="list-style-type: none">Using two deep neural networks in conjunction by merging them in a hierarchical layered structure to form a single robust modelUsing CNN and LSTM for classification																																																
4.	Social Impact / Customer Satisfaction	<ul style="list-style-type: none">It saves timeIt increases the accuracy of classification																																																
5.	Business Model (Revenue Model)	<div><h3>U.S. ECG Patch And Holter Monitor Market</h3><p>size, by product, 2020 - 2030 (USD Million)</p><table border="1"><thead><tr><th>Year</th><th>ECG Patch (USD Million)</th><th>Holter Monitors (USD Million)</th><th>Total (USD Million)</th></tr></thead><tbody><tr><td>2020</td><td>553.9</td><td>0</td><td>553.9</td></tr><tr><td>2021</td><td>560.0</td><td>0</td><td>560.0</td></tr><tr><td>2022</td><td>566.1</td><td>0</td><td>566.1</td></tr><tr><td>2023</td><td>572.2</td><td>0</td><td>572.2</td></tr><tr><td>2024</td><td>578.3</td><td>0</td><td>578.3</td></tr><tr><td>2025</td><td>584.4</td><td>0</td><td>584.4</td></tr><tr><td>2026</td><td>590.5</td><td>0</td><td>590.5</td></tr><tr><td>2027</td><td>596.6</td><td>0</td><td>596.6</td></tr><tr><td>2028</td><td>602.7</td><td>0</td><td>602.7</td></tr><tr><td>2029</td><td>608.8</td><td>0</td><td>608.8</td></tr><tr><td>2030</td><td>614.9</td><td>0</td><td>614.9</td></tr></tbody></table></div>	Year	ECG Patch (USD Million)	Holter Monitors (USD Million)	Total (USD Million)	2020	553.9	0	553.9	2021	560.0	0	560.0	2022	566.1	0	566.1	2023	572.2	0	572.2	2024	578.3	0	578.3	2025	584.4	0	584.4	2026	590.5	0	590.5	2027	596.6	0	596.6	2028	602.7	0	602.7	2029	608.8	0	608.8	2030	614.9	0	614.9
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2030	614.9	0	614.9																																															

6.	Scalability of the Solution	<ul style="list-style-type: none">• It can handle any amount of data and classify various types of arrhythmia in fully automated manner
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