Dear Reviewer,

Thank you for considering our manuscript for publication and for providing constructive feedback. Hereunder you will find our detailed replies to all Your comments. The changes are highlighted in the output of the latexdiff file attached to this cover letter.

Issue 1:

> minor element: the article still needs improvement in the way that data is presented (not sure of the accuracy of some data or the way the figures were obtained), the quality of figures and explanations of data presented.

Answer: Thanks for the issue. We modified all images description which is now showing as under:

' *Fig 1 description: "ECG Cardiac Cycle (image credit: Public Domain): x-axis (time), y-axis (amplitude in mV), typical duration (1 sec)"*

Fig 2 description: "(a) Normal ECG signals: x-axis (samples/datapoints), y-axis (frequency in Hz) (b) Raw signal transformed into spectrogram: x-axis (data segments), y-axis (frequency in Hz), (c) ASMI ECG signals: x-axis (samples/datapoints) (d) Raw signal transformed into spectrograms: x-axis (data segments), y-axis (frequency in Hz)"

Fig 3 description: "(a) Spectrogram before frequency filtration: x-axis (Data segments), y-axis (frequency in Hz), (b) Spectrogram after frequency filtration: x-axis (Data segments), y-axis (fre-quency in Hz)"

Fig 4 description: "Proposed model architecture with 1 input layer, 4 convolutional layers and 1 output layer"

Fig 5 description: "Memory Proportion on both datasets: raw signals and spectrograms"

Fig 6 description: "(a) Data Analytics: accuracy, precision and loss in log scale for both datasets: raw signals and spectrograms, (b) Validation accuracy: x-axis (no. of epochs), y-axis (accuracy) for both datasets: raw signals and spectrograms"

Fig 7 description: "Learning rate evaluation on both datasets: raw signals and spectrograms: x-axis (learning rate), y-axis (accuracy) "

Fig 8 description: "ECG sampling rate influence (down sampling) on algorithm quality: x-axis (sampling rate), y-axis (accuracy)"

The figures are obtained in 600 dpi (while according to journal guidelines, these should be minimum 300 dpi). However, there were some datapoints overlapping which are revised.

Issue 2:

> - major problem: the novelty statement is still not clear (and even written in a not grammatical way in the abstract). This is also not present in the conclusions. Without this, the paper is more of an engineering application presentation than a scientific article. From what is presented the reviewer has doubts if something really new was achieved.

Answer: Thanks for the issue. Novelty statement is revised as 'The novelty in proposed work is representation of possible reduced data to convolutional neural network model in well distinguishable form i.e., Spectrograms through Short Time Fourier Transformation (STFT) instead of raw signals. The data reduction performed by frequency filtration by taking a certain cutoff value with which a simple architecture of CNN model showed high accuracy rather than to utilize the complex model which ultimately requires more momeory and computational power. '

Novelty statement is also included in the conclusion.

Sincerely yours,
Muhammad Farhan Safdar
for the authors