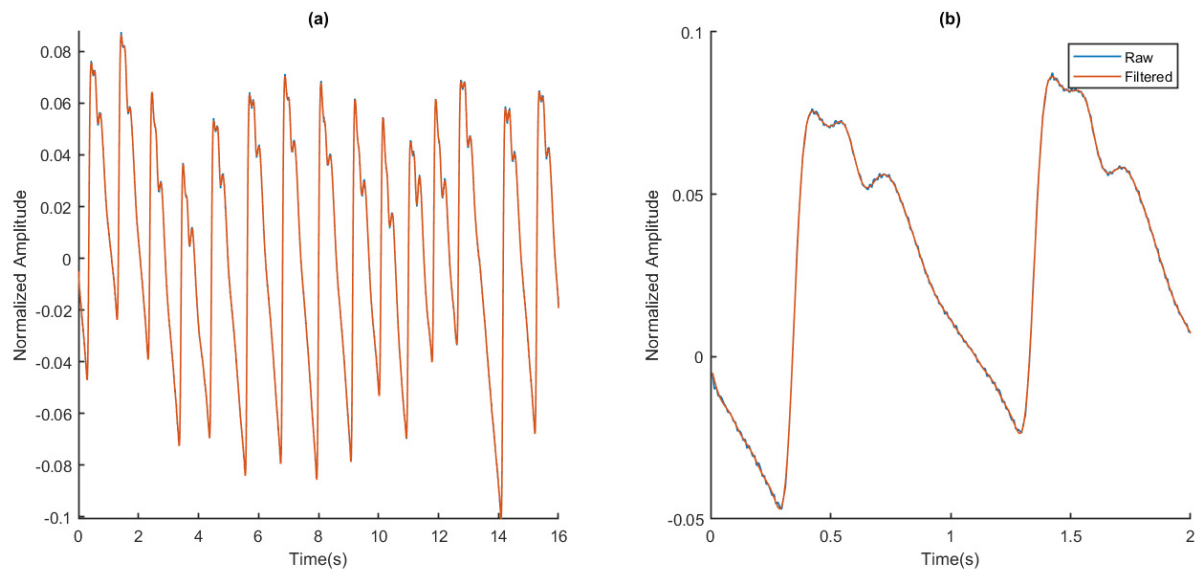


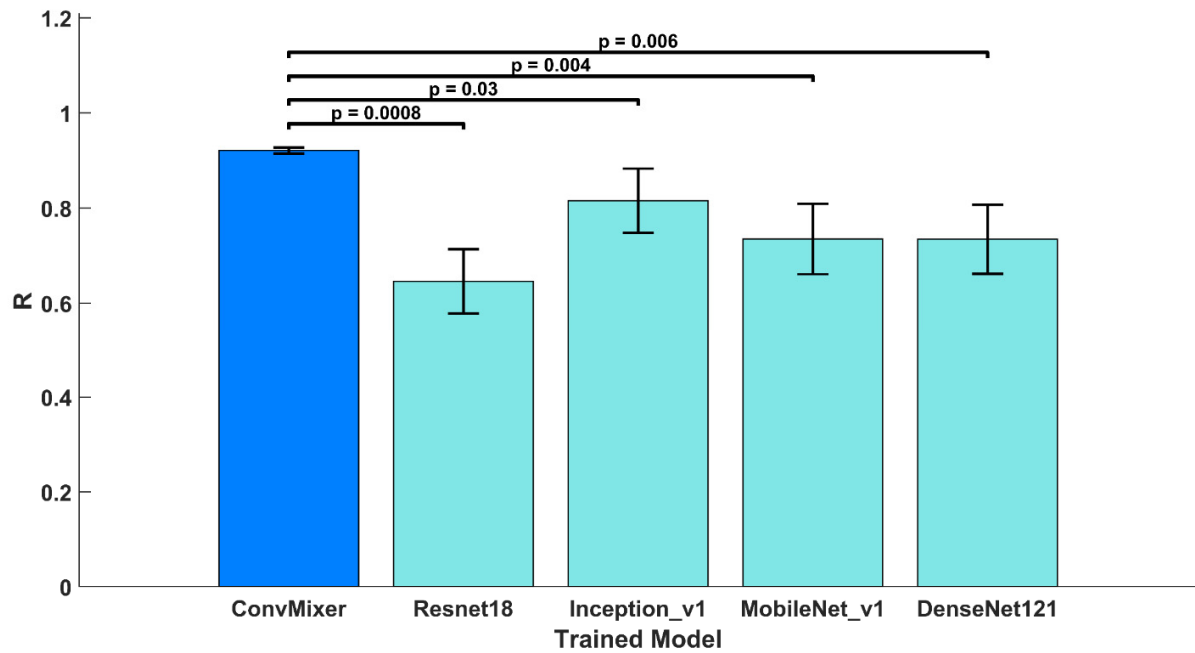
## Supplementary Materials

**Supplementary Table S1:** Summary of the current research in estimating RR

Author	Method Used
Nilsson et al. [32]	Digital Filtering
Zhou et al. [33]	Independent Component Analysis
Fleming et al. [34]	Auto-regressive Model
Karlen et al. [7]	Fast Fourier Transformation
Orphanidou et al. [25]	Auto-regressive Model
Madhav et al. [35]	Modified multi scale principal component analysis
Mirmohamadsadeh et al. [26]	Instantaneous Frequency Tracking Algorithm
Philip et al. [18]	Spot Assessment
Pimentel et al. [9,36]	Auto-regressive Model
Zhang et al. [37,38]	Joint Sparse Signal Reconstruction
Lin et al. [39]	Wavelet-Based Algorithm
Moreno et al. [40]	Digital Filtering
Pirhonen et al. [41]	Wavelet-Based
Jarchi et al. [42]	Accelerometer Based
Hartmann et al. [43]	Fast Fourier Transformation
Motin et al. [44,45]	Ensemble Empirical Mode Decomposition
Shuzan et al. [46]	Classical Machine Learning
Lampier et al. [47]	Deep Learning
Rathore et al. [48]	Deep Learning



**Supplementary Figure S1:** Applying a low pass filter to remove high-frequency noises. (a) Effect of filter on the whole signal (b) Zooming on 2s data to see the effect of low pass filter



**Supplementary Figure S2:** Paired sample *ttest* results showing that ConvMixer outperformed other models significantly ( $p < 0.05$ ).

**Supplementary Table S2:** Evaluation of Five Convolution Neural Networks using 5-fold cross validation on BIDMC dataset

Model	Parameters (millions)	R	MAE (bpm)	RMSE (bpm)
Resnet18	0.93	0.7835	1.3186	1.8709
Inception_v1	3.40	0.7957	1.3535	1.8924
Mobilenet_v1	2.01	0.7818	1.3510	1.8930
Densenet121	277.36	0.8298	1.1219	1.6652
<b><u>ConvMixer</u></b>	<b><u>0.56</u></b>	<b><u>0.9155</u></b>	<b><u>0.7656</u></b>	<b><u>1.2039</u></b>