

Supplementary Material – Improving Generalization of Deep Models for Cardiac Disease Detection using Limited Channel ECG

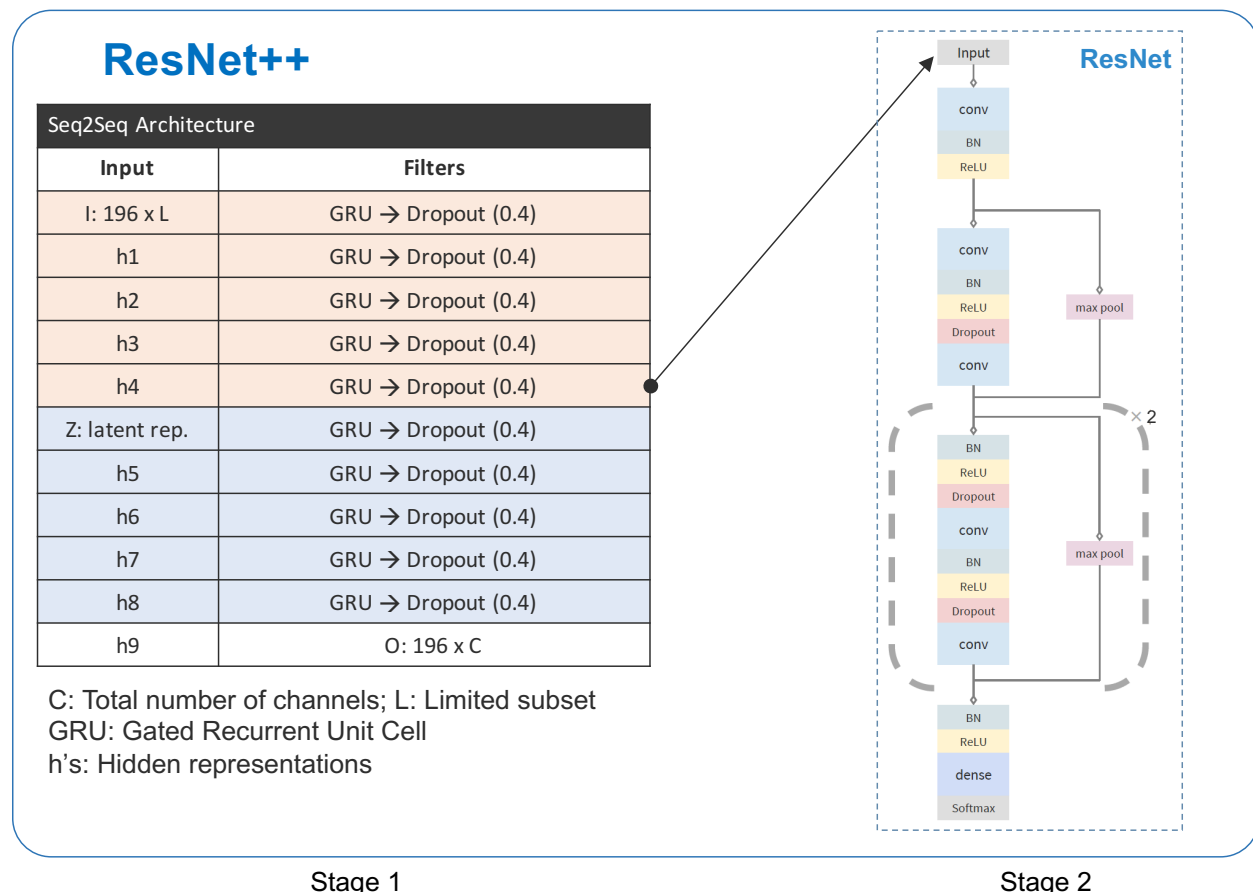


Figure 1. Shows the proposed *ResNet++* architecture, with Stage 1 depicting the unsupervised *Seq2Seq* model used to construct latent representation from limited channels, and Stage 2 depicts *ResNet* model similar to [1] to perform classification.

Channel Configuration: II, III, aVF			
Input Classes: Healthy Control, Infero Myocardial Infarction			
Cardiac Disease	ResNet	ResNet++	% Gain
Infero MI	0.84	0.87	3.57
Antero MI	0.87	0.89	2.30
Bundle Branch Block	0.59	0.66	11.86
Dysrhythmia	0.67	0.71	5.97
Cardiomyopathy	0.77	0.81	5.19
Valvular Heart Disease	0.32	0.33	3.13

Figure 2. F1-Scores demonstrating the improvement of *ResNet++* over *ResNet* on PTB dataset

[1] Rajpurkar, Pranav, et al. "Cardiologist-level arrhythmia detection with convolutional neural networks." *arXiv preprint arXiv:1707.01836* (2017).