

Accepted Manuscript

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PII: S0167-739X(17)31524-8
DOI: <http://dx.doi.org/10.1016/j.future.2017.08.039>
Reference: FUTURE 3634

To appear in: *Future Generation Computer Systems*

Received date: 12 July 2017
Revised date: 3 August 2017
Accepted date: 20 August 2017

Please cite this article as: U.R. Acharya, H. Fujita, S.L. Oh, U. Raghavendra, J.H. Tan, M. Adam, A. Gertych, Y. Hagiwara, Automated identification of shockable and non-shockable life-threatening ventricular arrhythmias using convolutional neural network, *Future Generation Computer Systems* (2017), <http://dx.doi.org/10.1016/j.future.2017.08.039>

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Automated identification of shockable and non-shockable life-threatening ventricular arrhythmias using convolutional neural network

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Abstract

Ventricular tachycardia (VT) and ventricular fibrillation (VFib) are the life-threatening shockable arrhythmias which require immediate attention. Cardiopulmonary resuscitation (CPR) and defibrillation are highly recommended means of immediate treatment of these shockable arrhythmias and to resume spontaneous circulation. However, to increase efficacy of defibrillation by an automated external defibrillator (AED), an accurate distinction of shockable ventricular arrhythmias from non-shockable ones needs to be provided upfront. Therefore, in this work, we have proposed a novel tool for an automated differentiation of shockable and non-shockable ventricular arrhythmias from 2 seconds electrocardiogram (ECG) segments. Segmented ECGs are processed by an

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