Chaiwat Suwansaroj 2010: Design and Development of ECG Paper Conversion Prototype. Master of Engineering (Information and Communication Technology for Embedded Systems), Major Field: Information and Communication Technology for Embedded Systems, Department of Electrical Engineering. Thesis Advisor: Assistant Professor Dusit Thanapatay, Ph.D. 72 pages.

The purpose of this research is to develop a method for ECG beat classification from ECG printout. This method composes with image processing and ECG beat classification. Image processing is used for extract time-series ECG signal from ECG printout. It use threshold base and moving average technique for create ECG time-series data. After that the selected beat is classified with SVM classifier. The output of classification is type of ECG signal with confidence measure value. This classifier use MIT-BIH database for training. LIBSVM is used for SVM implementation.

The accuracy of SVM based classifier is 99.682% (correct classification 33326 from 33332) with single lead basis (limb lead II or MLII) on MIT-BIH database. Performance on real ECG printout is good for high quality input. Then an improvement of image processing algorithm is required for real world reliability. This thesis use Python and its library as programming language.

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