I:手和手

II：左手右脚

III：右手左脚

V1-V5 胸导联

Classification of Time-Series Images Using Deep Convolutional Neural Networks

<https://www.arxiv-vanity.com/papers/1710.00886/>

Google 搜索2D cnn ecg github 能搜出很多

Classify Time Series Using Wavelet Analysis and Deep Learning

<https://www.mathworks.com/help/wavelet/examples/signal-classification-with-wavelet-analysis-and-convolutional-neural-networks.html#d117e8438>

<https://github.com/shipengai/ECG-Segment-LSTM>

lstm用于心电图图像分割

github搜索ecg pytorch

Pytorch有涉及到一点，但不是很详细

<https://github.com/aradhyamathur/PyTorch-Explore/blob/master/ECG%20NN.ipynb>

<https://github.com/physhik/ecg-mit-bih>

ECG classification using MIT-BIH data, a deep CNN learning implementation

<https://github.com/ankur219/ECG-Arrhythmia-classification>

ECG arrhythmia classification using a 2-D convolutional neural network

<https://github.com/chingchan1996/ECG-Arrhythmia-Classification-in-2D-CNN>

数据库及可以在线看波形的网站

<https://www.physionet.org/about/database/#ecg>

导联图介绍

<https://wenku.baidu.com/view/33b08a016c175f0e7cd13748.html>

这篇关于心电图的讲得比较详细

<https://wenku.baidu.com/view/bb5361ff58fafab069dc02db.html>

房颤数据：

google搜索：Atrial Fibrillation github 有一个生物竞赛好像有比过单导联的题目

接下来要做的工作:

1、找到房颤数据进行训练

2、看下插值后图会不会不好辨认，特别是房颤

3、用图的形式进行训练

4、边做边记录，形成一个完整的项目