

High Integrity Systems Project

TSA Tasks 08

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Now we want to apply the gained understanding::

1. Please make yourself knowledgeable of *Electrocardiograms (ECGs)* and their medical interpretation!
2. Please make yourself familiar with the following dataset of ECGs:
<https://physionet.org/content/ptb-xl/1.0.3/>
3. Our work so far has been the preparation of the following: We want to use the appropriate models for ECG forecasting tasks:
 - Arrhythmia Prediction: Forecasting abnormal heart rhythms can help in early detection and prevention of conditions like atrial fibrillation or ventricular tachycardia.
 - Heart Rate Variability (HRV) Analysis: Predicting HRV can provide insights into the autonomic nervous system's regulation of the heart, which is useful for assessing stress levels, sleep quality, and overall cardiovascular health.
 - Cardiac Event Prediction: Forecasting potential cardiac events such as heart attacks or heart failure can enable timely medical interventions and improve patient outcomes.
 - There are many more applications. Use your ingenuity!
 - This is a research project. The best model has to be found!