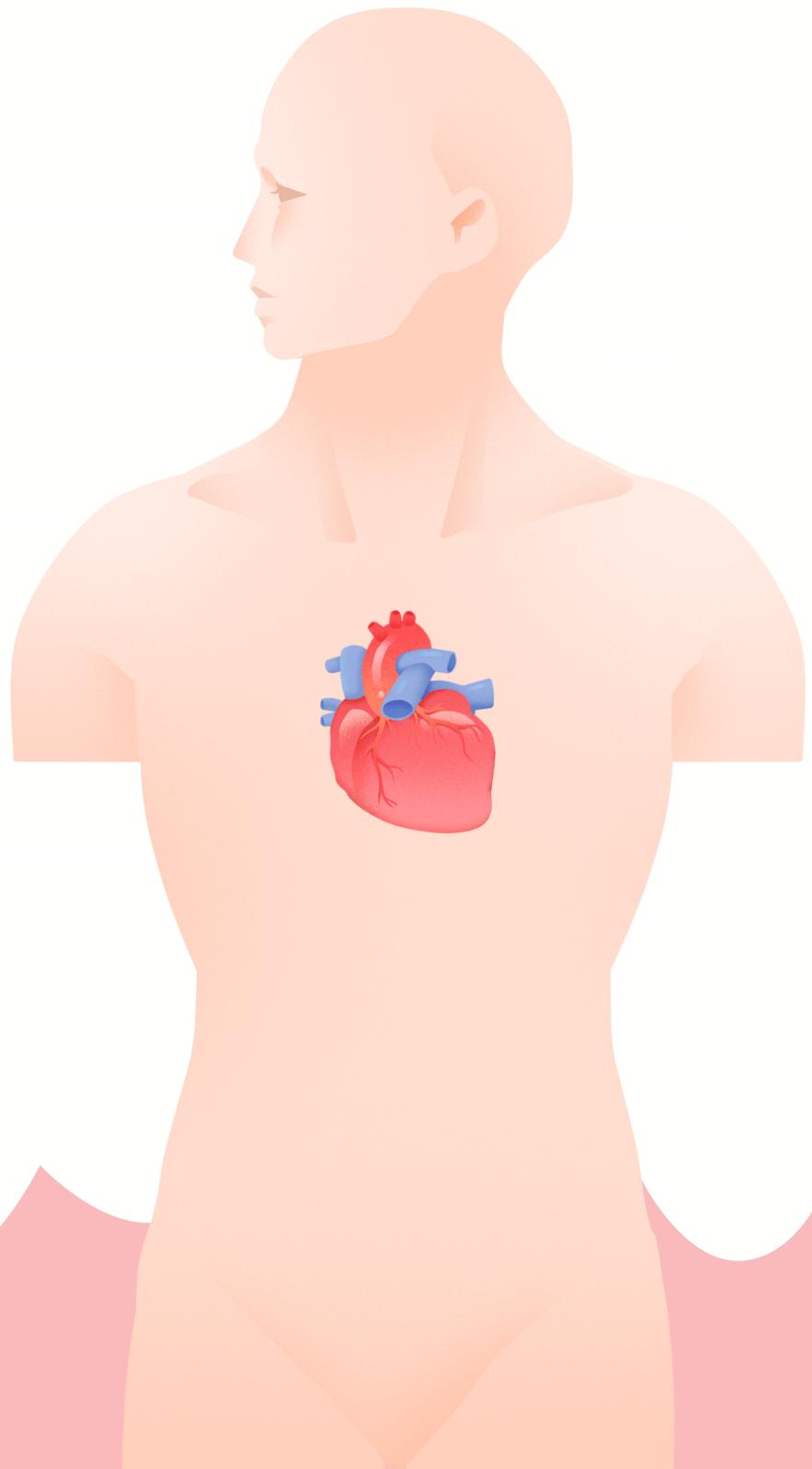


ECG CLASSIFICATION VIA FOURIER TRANSFORMS

AUTHOR: CALVIN CHAN



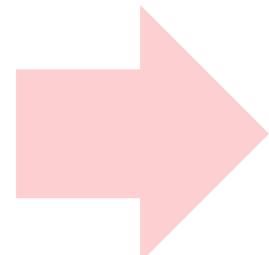
Importance of ECGs



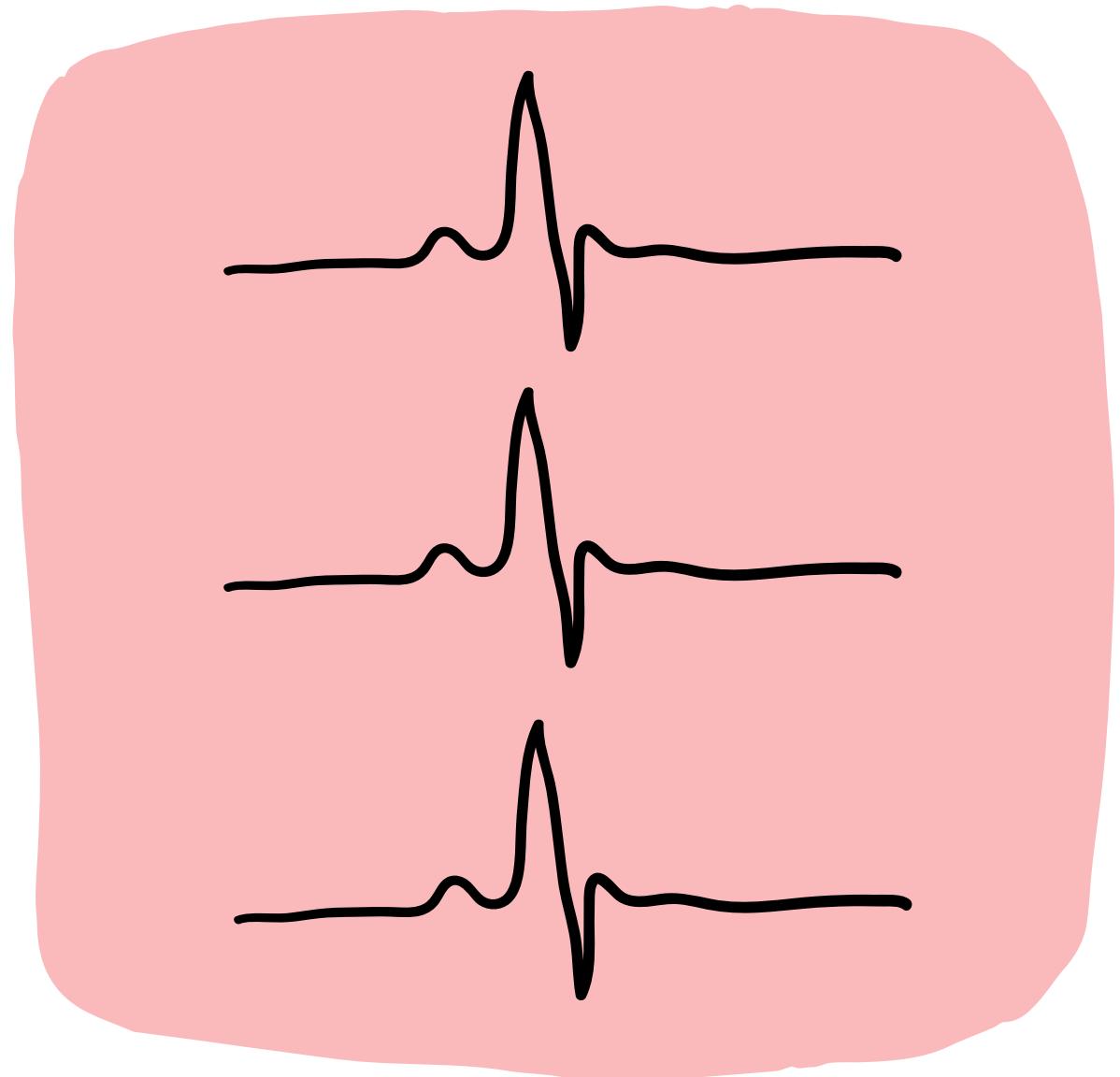
Diagnosing heart conditions
and risk assessments

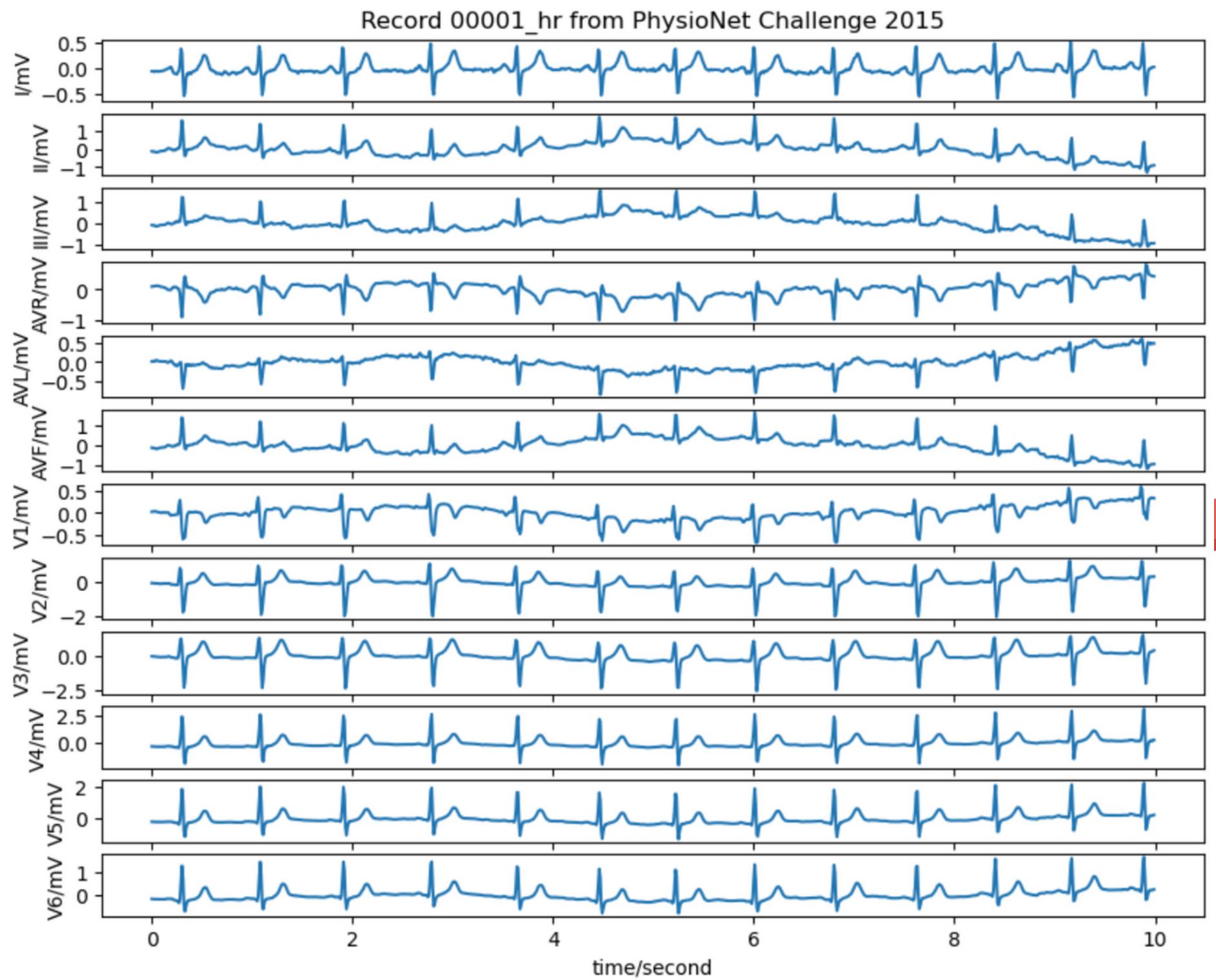


Although highly skilled, doctors
might make mistakes too



Use data science techniques
to classify ECG signals





PTB-XL from PhysioNet

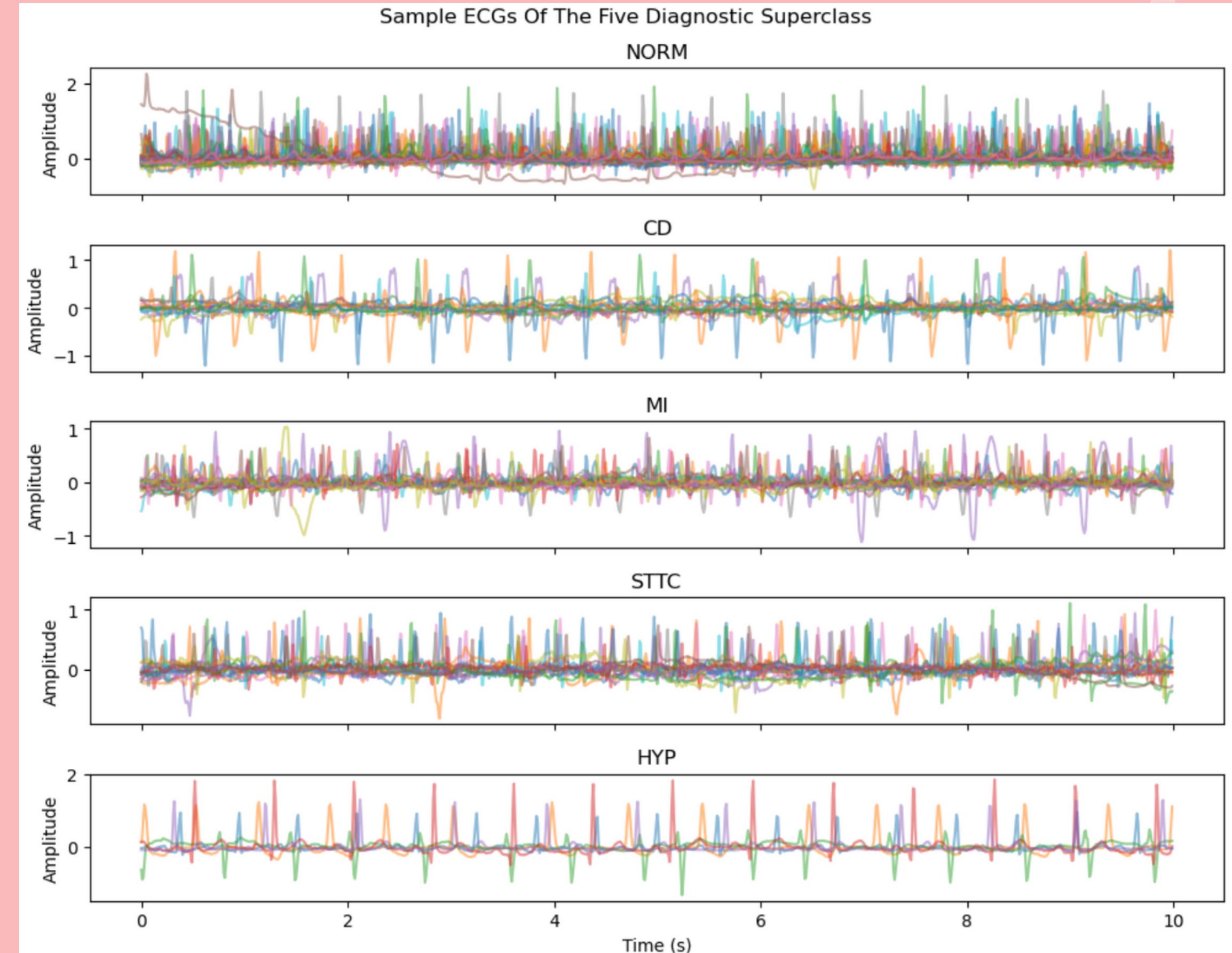
- Contains 21799 ECG records, each record contains 12 leads
- Five diagnostic classes (NORM, HYP, MI, CD, STTC)

Data Cleaning

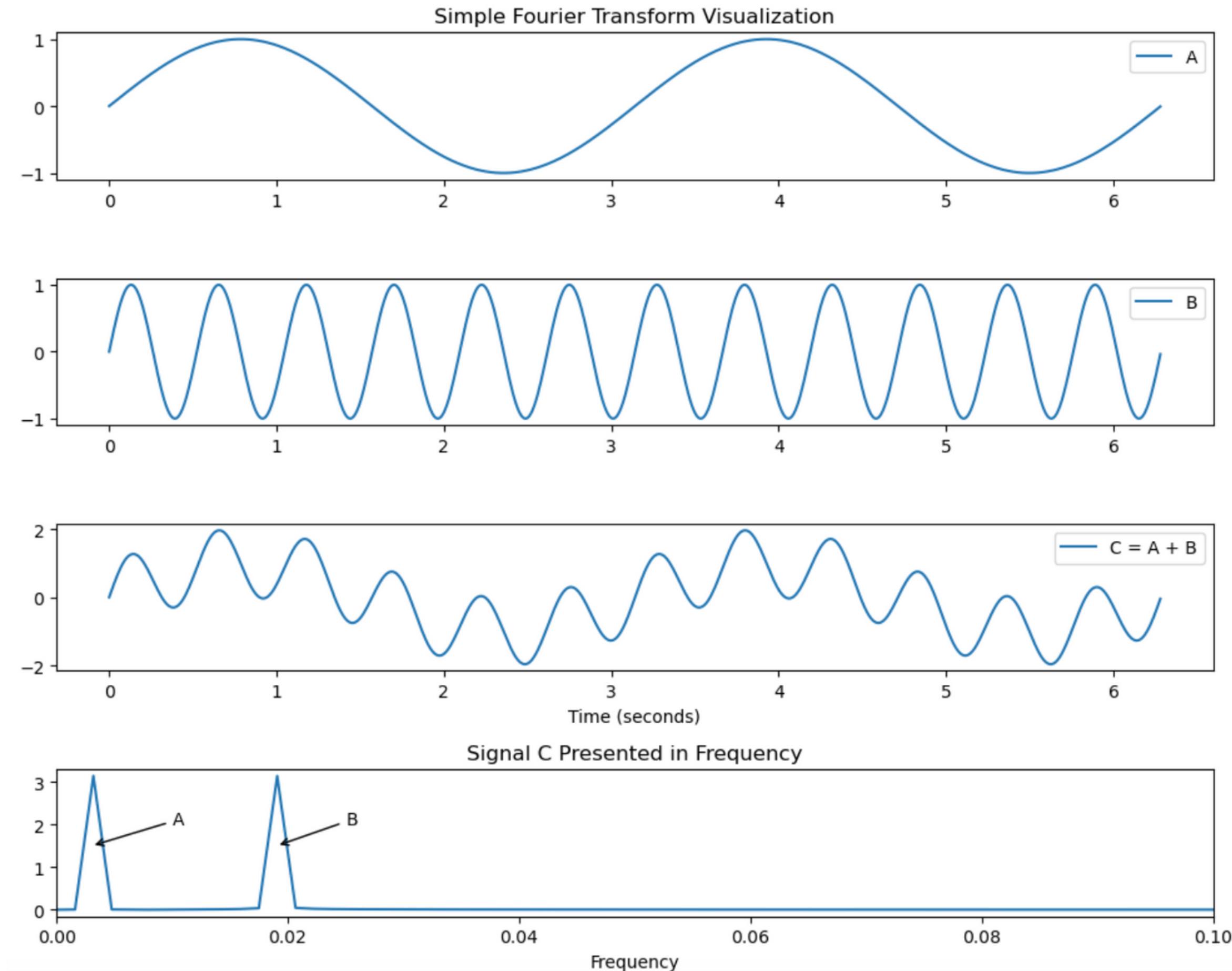
- Removing or filling in missing information
- Removing duplicated data

Exploratory Data Analysis

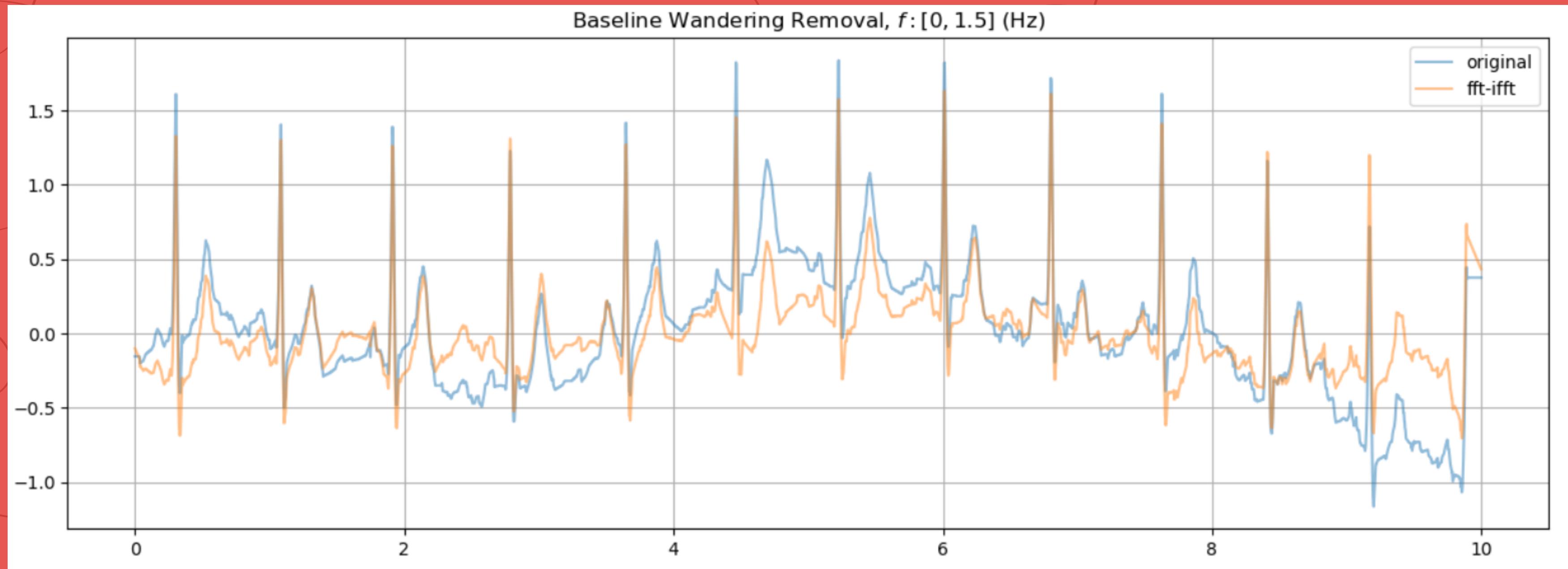
- Looking at the five different types of ECGs, we simply cannot distinguish between them
- There is too much noise
- Need some method to help us with this
 - Fourier Transforms

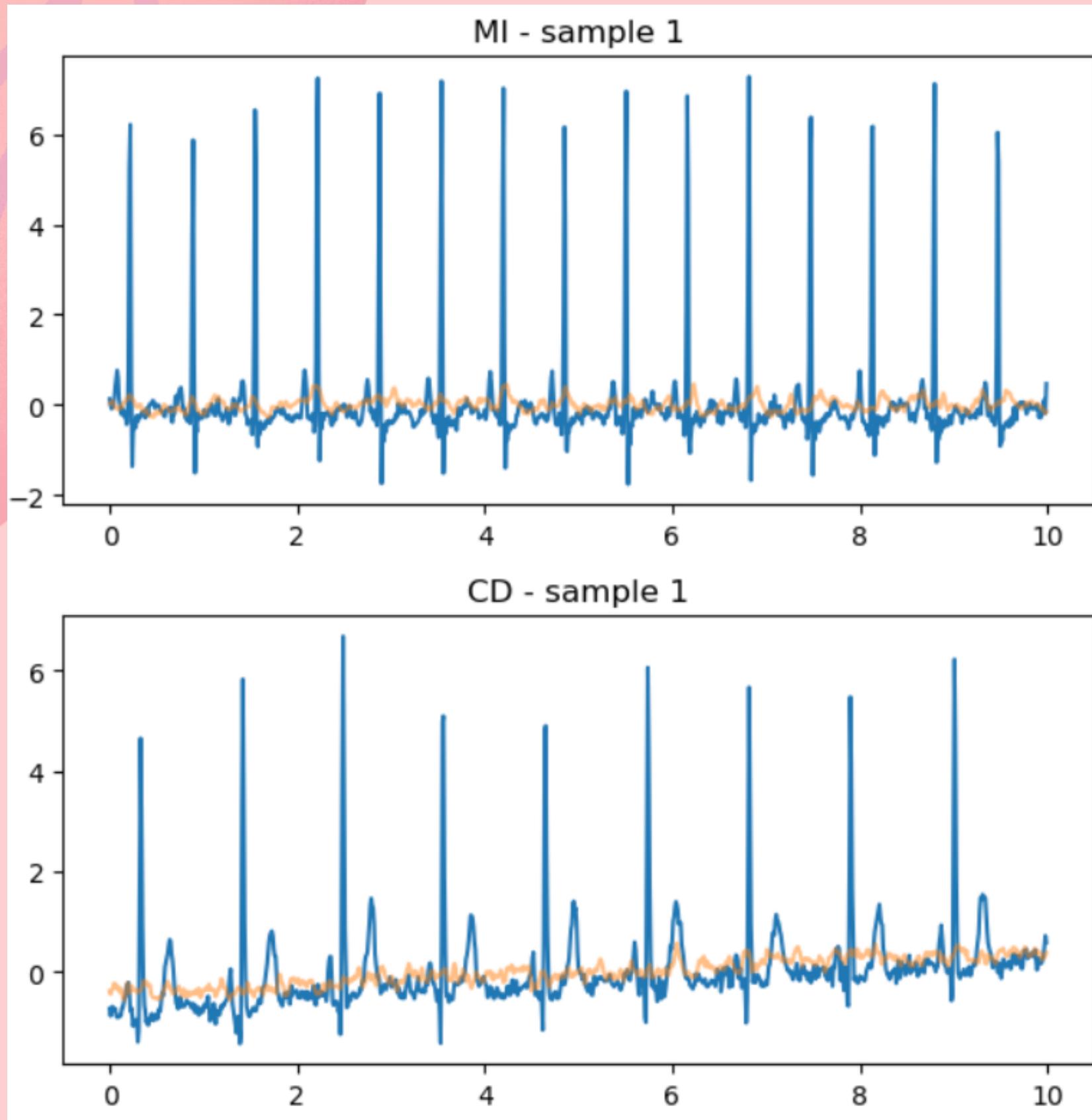


Fourier Transforms



This is how it looks on a sample ECG signal





BASELINE MODELING

- Using autoencoders do not work well with our data
 - Unable to capture features in our signal
- Try out other model types

Next Steps

- Apply Fourier Transforms
- Redo models with better signals
- Test out other models

THANK YOU!