Major Resources Table

This document provides readme documentation for the source code used to generate the results for the manuscript. There is also a demo code to show the results of the trained model for a sample dataset.

Data & Code Availability

- Code: The main code is presented in a Jupyter notebook format (.ipynb). The code provides information for all the steps and the functions that are used in the result. Comments are provided for each function.
    - The main code is saved in "Code_for_manuscript_submission.ipynb" as jupyter notebook in the Code folder. The rest of the functions are helper functions saved as a .py file. The full source code will only run with full dataset (we only provide demo dataset).
- Data: Only a subset of the data is provided for demo purposes and can be found in the Demo folder.

URL: https://github.com/NarayanLab/VT_MAP_Project

Description	Source / Repository
Excel sheet showing the actual labels for both VTVF and Mortality endpoints and whether they were in training/validation splits in the trained model	20191219.xlsx
Helper function to calculate accuracy, sensitivity, specificity, NPV, PPV	Calc_metrics_v2
Jupyter notebook to run demo. Running this demo will show results from the sample dataset provided.	Demo_Code.ipynb
Trained model using cross validation 1 for mortality endpoint	Mortality_CV1_finalized_mode.sav
Trained model using cross validation 1 for VTVF endpoint	VTVF_CV1_finalized_model.sav
Input and true output for model (Mortality). First 5-digit contain patient ID, and last 4 digits contain beat ID.	Mortality_labels_demo & Mortality_tsfresh_features_demo
Input and true output for model (VTVF).	VTVF_labels_demo & VTVF_tsfresh_features_demo
Numpy (.npz) file that has the voltage-timeseries MAPs. Each point is 1msec apart and the values are voltages in mV.	demo_data_20191219.npz

1. Hardware and Software

This program runs on a desktop computer system with following specifications:

- Inter Core i9-9900K CPU @3.6Ghz, 3600 Mhz, * cores, 16 Logical Processors
- Microsoft Windows 10 Pro
- 32 GB RAM

All computations were performed on Python 3.6 using Anaconda Navigator 1.9.7. The following packages were used:

- numpy 1.17.3
- pandas 0.23.4
- pandas-datareader 0.8.0
- scikit-learn 0.21.3
- scipy 1.3.1
- tsfresh 0.12.0
- xlrd 1.2.0
- xlsxwriter 1.2.6
- jupyter 1.0.0
- pickle 1.0 or higher
- matplotlib 3.3.0

2. Software License

DOI [to be added]