Database Open Access

ECG-ID Database

Published: March 6, 2014. Version: 1.0.0

Biometric Human Identification based on ECG *(March 6, 2014, 1 p.m.)*

The ECG-ID Database is a set of 310 ECGs from 90 volunteers, created and contributed to PhysioBank by Tatiana Lugovaya, who used the ECGs in her master's thesis. An excellent summary of this thesis, with a discussion of the challenges in using ECGs as biometrics, and a comparison of the author's methods and results with those of three previous studies, is also available.

When using this resource, please cite the original publication:
Lugovaya T.S. Biometric human identification based on electrocardiogram. [Master's thesis] Faculty of Computing Technologies and Informatics, Electrotechnical University "LETI", Saint-Petersburg, Russian Federation; June 2005.

Please include the standard citation for PhysioNet: (show more options)
Goldberger, A., Amaral, L., Glass, L., Hausdorff, J., Ivanov, P. C., Mark, R., ... & Stanley, H. E. (2000). PhysioBank, PhysioToolkit, and PhysioNet: Components of a new research resource for complex physiologic signals. Circulation [Online]. 101 (23), pp. e215–e220.

Data Description

The database contains 310 ECG recordings, obtained from 90 persons. Each recording contains:

- ECG lead I, recorded for 20 seconds, digitized at 500 Hz with 12-bit resolution over a nominal ±10 mV range;
- 10 annotated beats (unaudited R- and T-wave peaks annotations from an automated detector);
- information (in the .hea file for the record) containing age, gender and recording date.

The records were obtained from volunteers (44 men and 46 women aged from 13 to 75 years who were students, colleagues, and friends of the author). The number of records for each person varies from 2 (collected during one day) to 20 (collected periodically over 6 months).

The raw ECG signals are rather noisy and contain both high and low frequency noise components. Each record includes both raw and filtered signals:

- Signal 0: ECG I (raw signal)
- Signal 1: ECG I filtered (filtered signal)

Contributors

This database was created and contributed by Tatiana Lugovaya, who used it in her master's thesis

License (for files):
Open Data Commons Attribution License v1.0

Discovery

DOI (version 1.0.0):
https://doi.org/10.13026/C2J01F

Topics:
noise ecg

Corresponding Author

You must be logged in to view the contact information.

Files

Total uncompressed size: 12.5 MB.

Access the files

- Download the ZIP file (12.6 MB)
- Access the files using the Google Cloud Storage Browser here. Login with a Google account is required.
- Access the data using the Google Cloud command line tools (please refer to the gsutil documentation for guidance):
  `gsutil -m -u YOUR_PROJECT_ID cp -r gs://ecgiddb-1.0.0.physionet.org DESTINATION`
- Download the files using your terminal: `wget -r -N -c -np https://physionet.org/files/ecgiddb/1.0.0/`
- Download the files using AWS command line tools: `aws s3 sync s3://physionet-open/ecgiddb/1.0.0/ DESTINATION`

Visualize waveforms

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