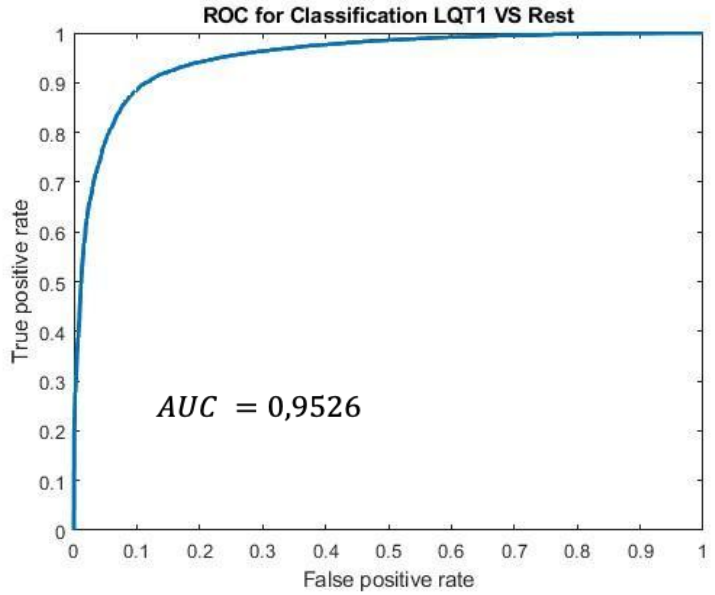
Prediction of life-threatening arrhythmias and sudden death

- The prediction of sudden death risk in patients with genetic disorders affecting the electrophysiological substrate of the heart is a difficult task
- Preliminary data suggest that Machine learning and deep learning can improve the identification of abnormal ECG patterns beyond the human eye.



Molecular Cardiology ICS Maugeri

DL-driven diagnostic performance of LQT1 genotype from 12-leads ECG-Holter monitoring

(analysis developed by dr Pietro Orani)

The clinical problem

- To develops AI-based methods to predict sudden death risk from electrocardiograpphic recordings in patients with inherited (genetic) arrhythmias)
- RESOURCES
  - Prospective registry with clinical and follow up information of approximately 8000 subjects (most frequent diagnoses: LQTS, BrS, CPVT, ARVC)
  - Repository of ≈19,000 12 leads digitized Holter recordings (s.r. 180Hz) collected prospectively since 2013
  - Repository of 92,000 resting ECGs in PDF format (all aquired with the same format)