ELECTRICAL, ELECTRONICS AND COMMUNICATIONS ENGINEERING

Eurecom/DET - Analog to digital conversion of medical images

Funded By	EURECOM - ECOLE D'INGENIEURS & CENTRE DE RECHERCHE EN SYSTEMES DE COMMUNICATIONS [P.iva/CF:65383181575] Dipartimento DET
Supervisor	PASERO EROS GIAN ALESSANDRO - eros.pasero@polito.it
Contact	RANDAZZO VINCENZO - vincenzo.randazzo@polito.it
Context of the research activity	Machine Learning, Artificial Neural Networks and other tools used to enhance the medical analysis of body signals like ECGs and other, need to have digital signals available. The problems related to his conversion will be evaluated.
Objectives	Machine Learning, Artificial Neural Networks and other tools used to enhance the medical analysis of body signals like ECGs and other, need to have digital signals available. The sensors used to detect these signals can give digital information but physicians typically use an analog format to make diagnosis. An example is the ECG that is typically a black line over a pink grid. Artificial Intelligence is based on algorithms that use digital information. A big challenge is to transform these analog data into suitable digital information. The PhD position will be in charge of making this transformation considering also the metric related to precision, accuracy, sensitivity, ROC curve and F-score. Generative Artificial intelligence will also be tested for these applications.
Skills and competencies for the development of the activity	Artificial Neural Networks, Image analysis