**Academic audience:**

In our day-to-day life, we encounter the need of identification. It is required when we travel abroad, when we purchase expensive goods or when we wish to open a bank account. Mostly, our identity is confirmed digitally. This kind of identification is one of the main themes in the world of cyber. Thus, one of the main challenges in this world is preventing identity theft. These days, most of the techniques to mitigate this challenge tend to have the same concept, which is measuring a biological marker or a physiological signal that is unique to every individual. This technique is known as “biometrics”. In recent years, ECG, which is a recording of the electrical activity of the heart, was suggested as a biometric. The ECG signal is highly complex and non-stationary and even as such, it was shown that it is unique to every individual. However, the ECG device set-up is not user-friendly and has high costs. We suggest an innovative biometric that can overcome those limitations since it is based only on the heart rate, and more precisely, on *heart rate variability* (HRV). HRV is a set of statistical measures of the heart rate that can tell us a lot about the physiological condition of the heart itself. We believe that HRV contains enough information to be used as a robust biometric. In contrary to ECG, heart rate can be measured easily using smart watches or even remotely by video cameras. The linking function between HRV and every individual remains mysterious and thus state of the art machine learning techniques should be applied.

**General audience:**

Many times in our life, we come across the need of identification. We have to identify ourselves in airports when we travel or when we open a bank account, for example. Mostly, a software is used to confirm our identity. This information is of course personal and should be secured. That’s where *cyber* kicks-in. Today, we use a technique that is called *biometric* which tries to capture a unique biological or a physiological feature to every one of us such as fingerprints recognition, face recognition etc.

ECG is a device that measures the electrical activity of the heart that you probably met only in the clinics. Though recently it was shown that it is also unique to every individual and thus can be used as a biometric. The main disadvantage of this approach is the high costs of the device and the fact that only a professional can set it up properly. Heart rate, however, can be measured easily by an affordable smart watch. *Heart rate variability* (HRV) is a set of statistical measures of the heart rate that can tell us a lot about the physiological condition of the heart itself. We believe that HRV is also specific to every individual and it can be used as a biometric. The relationship between HRV and every individual is still unknown and artificial intelligence can come in handy as in many other fields in recent years.