**Neural Networks & Fuzzy Logic**

**Assignment #3**

**Fall 2020**

**Submission deadline: 22th Dec 2020**

An **arrhythmia** is a problem with the rate or rhythm of your heartbeat. It means that your heart beats too quickly, too slowly, or with an irregular pattern. Several tests can help your doctor diagnose an arrhythmia and monitor the effectiveness of your treatment. The most common test used to **diagnose** an **arrhythmia** is an **electrocardiogram** (**EKG** or **ECG**).

Computer -Aided diagnosis of **arrhythmia** is possible through different classification algorithms. UCI Machine learning repository provides the dataset for training and testing of such diagnosis. The aim of this data is to distinguish between the presence and absence of cardiac arrhythmia and to classify it in one of the 16 groups. Class 01 refers to 'normal' ECG classes 02 to 15 refers to different classes of arrhythmia and class 16 refers to the rest of unclassified ones.

This database contains 279 attributes. Below is the link of UCI arrhythmia dataset.

[UCI Machine Learning Repository: Arrhythmia Data Set](https://archive.ics.uci.edu/ml/datasets/Arrhythmia)

You need to implement the neural network model for this classification in python. Present the result and its analysis. Show the results with different design choices and discuss the results.