

# **Wireless Signal Classification using Deep learning**

Project Outline: The project will constitute configuration of different data samples of various wireless signals, e.g, bluetooth, wi-fi, zigbee, etc. and training the data samples using the deep learning models to classify them on the basis of the type and on the channel of the signal sample. Wireless signals with different signal to noise ratios in both IQ time series form and FFT frequency bins will be used primarily to create input data for model training. Keras and Tensorflow libraries will be used for creating models in Python. Several types of deep neural networks will be used, such as RNNS, LSTMs, CNNs, etc.

The final product of research project will be a model which will be capable of classifying a wireless signal into several categories for practical applications like DSM and spectrum sensing. This research project will lay emphasis on finding solution to this classification problem of wireless signals and working on the feature analysis and extraction of various data samples and technologies being used for training them. We will also focus on researching on the state-of-the-art solutions in this domain of deep learning and finding a more robust solution.