

# AUTOMATIC MODULATION CLASSIFICATION

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**OBJECTIVE:** To classify different types of modulation using CNN layers

The traditional signal-based modulation recognition technology first designs and extracts the signal features, and then designs the classification rules to modulate the signal characteristics. The signal characteristics and classification rules of the hand design are usually limited in the complex channel environment. A deep learning-based modulation recognition technique is proposed for automatically learning classification rules from feature data to improve classification accuracy.

**METHODOLOGY :** The dataset is generated using MATLAB (.m files) of four different types of signal classification that are BPSK , PSK , QAm4 , QAM16 . The network layers used are convolutional , Dense and flatten with activation function as RELU . The code is compiled using optimizer and loss is calculated using MSE.

Model: "sequential\_23"

Layer (type)	Output Shape	Param #
conv2d_20 (Conv2D)	(None, 2, 97, 64)	320
dense_42 (Dense)	(None, 2, 97, 20)	1300
flatten_13 (Flatten)	(None, 3880)	0
dense_43 (Dense)	(None, 10)	38810
dense_44 (Dense)	(None, 4)	44
Total params: 40,474		
Trainable params: 40,474		
Non-trainable params: 0		
None		

Total of 1000 iterations are used out of which 800 are used for training the data and 200 are used for testing the data.

**RESULT** : Graph between epochs and loss

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