

Application of Deep Learning to Identify an Unknown Modulation Scheme

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- Research Question: How to build an automatic modulation classification algorithm based on a neural network?
- Scenario 1: classify modulation scheme from a list of 10 potential candidate modulations.
- Scenario 2: identify an unknown modulation scheme by estimating the locations of the constellation points.
- Methodology:
 - Generate training data in Matlab
 - Build and train a neural network in Python (Keras Library)
 - Optimise the hyperparameters for better classification and identification accuracy

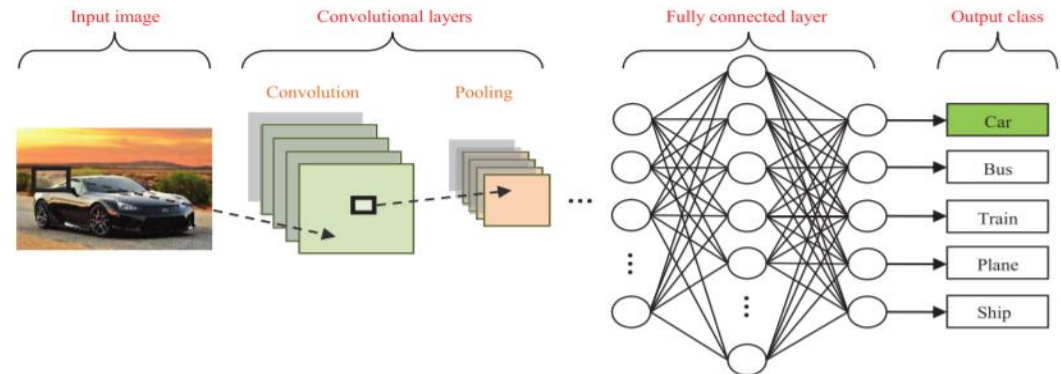


Image Credit: Rawat, W. and Z. Wang, Deep Convolutional Neural Networks for Image Classification: A Comprehensive Review. Neural Comput, 2017. 29(9): p. 2352-2449.

Result for Scenario 2:
Accuracy at SNR = 10 dB is above 99%

