Abstract

This thesis presents a novel method for designing a modulation scheme using artificial neural networks. This method models the communication system as a low complexity autoencoder which learns a modulation scheme. The learned modulation scheme is compared to communication systems using Hamming and convolutional codes with binary phase-shift keying (BPSK) and is shown to be competitive with these traditional communication systems in both bit error rate and computational complexity. Proving the capability of the autoencoder modem reveals a promising future of deep learning communication systems that do not require error correction coding.