

EE5601: Representation Learning, Fall 2018 (34)

Indian Institute of Technology Hyderabad

HW 2, Assigned: Thursday 04.10.2018. 50 points

Due: Sunday 14.10.2018 at 11:59 pm.

1. Implement an autoencoder with the sparsity constraint. You can build on the MLP implementation from 5600 (for those of you that have taken the course). Choose your network size appropriately (meaning a size that you can train and test on your computer without running into memory issues). (15)
2. Implement a variational autoencoder. Ensure you generate z using the reparameterization technique so that backpropagation can work. Train on the MNIST database. You can downsample the images to 14×14 to make your optimization converge faster. Again, build on your MLP implementation from before (either 5600 or Q1 above). (35)