

## CS 7150: Deep Learning — Summer-Full 2020 — Paul Hand

Week 9 — Preparation Questions For Class

Due: Monday July 13, 2020 at 12:00 PM Eastern time via [Gradescope](#)

Name: [Put Your Name Here]

Collaborators: [Put Your Collaborators Here]

You may consult any and all resources in answering the questions. Your goal is to have answers that are ready to be shared with the class (or on a hypothetical job interview) as written. **Make sure to tag each question when you submit to Gradescope.**

**Directions:** Read the article '[Auto-Encoding Variational Bayes](#)'.

**Question 1.** *Explain the statistical learning framework as it applies to VAEs.*

**Response:**

**Question 2.** *Explain how a VAE works.*

**Response:**

**Question 3.** *What is the reparameterization trick?*

**Response:**

**Question 4.** *Explain the relationship between the variational lower bound, reconstruction error, and regularization?*

**Response:**

**Question 5.** *Explain Figure 4 and its significance.*

**Response:**