

MASTER'S THESIS PRESENTATION

Exploring Hyperparameters of Energy-Based Models

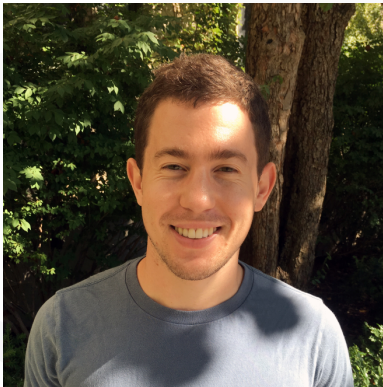
WHEN

**April 28, 2021
2:00 PM, CDT**

WHERE

Via ZOOM

ZOOM information will be provided in the email announcement for this seminar.

**Charlie Perkins, MS candidate**

Energy-based models can perform well in generative settings. However, they are sensitive to their many hyperparameters and can easily fail to train. This paper investigates how common hyperparameter and regularization settings change the model and identifies how they should be best set to stabilize training without sacrificing performance. Theory supporting energy-based models is based on the use of Markov chain Monte Carlo methods which traditionally require many steps to reach samples representative of a target distribution. Many papers reduce the number of MCMC steps used, and we show that this is the primary driver of model instability. We then demonstrate the viability of certain techniques to combat this instability with a focus on spectral normalization on the layers of the network and intelligent initializations for data synthesis.

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