DD-GAN-AE

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CHAPTER

ONE

MODELS

This package contains three models that can readily be used with user defined or imported network architectures. These consist of: adversarial autoencoder, convolutional autoencoder, and SVD autoencoder.

1.1 Adversarial Autoencoder

1.2 Convolutional Autoencoder

1.3 SVD Autoencoder

CHAPTER

TWO

HYPERPARAMETER OPTIMIZATION

This package contains some functionality for doing hyperparameter optimization with the Weights and Biases platform. Below is the documentation for the functions that handle this for the flow past cylinder and slug flow problems.

2.1 Flow Past Cylinder

2.2 Slug Flow

CHAPTER

THREE

UTILITIES

This package also contains some utilities for printing, loss functions, etc…

CHAPTER

FOUR

LIBRARY OF ARCHITECTURES

While the package is built in such a way that the user can easily use the architectures they designed. This package also includes a set of premade architectures. These are listed below.

4.1 Convolutional Architectures

Note that we have different architectures for the flow past cylinder and slug flow problems.

4.1.1 Two Dimensional (Flow Past Cylinder)

4.1.2 Three Dimensional (Slug Flow)

4.2 Discriminator Architectures

4.3 Mixed architectures for SVD Autoencoder