**README: Random Walk**

This Readme file contains information on how to replicate the results for the Random Walk experiments.

The folder RandomWalk contains:

* 00.createGPLSTM.py : creates the GPLSTM backend used by RW\_propagation\_GPLSTM.py to load the model.
* 01.RW\_plot.py : Can be used to sample random walks and plot them
* 02.RW\_propagation\_exact.py: Propagate theoretic exact values using the propagation algorithm.
* 03.RW\_GPLSTM.py : Train a GPLSTM and predict with shift *n.* Including prediction plots, variance and step-size histogramms
* 04.RW\_propagation\_GPLSTM: Propagate one step ahead GPLSTM mean predictions and variance estimates over multiple steps. Pretrained GPLSTM with shift n=1 required. (Run RW\_GPLSTM.py with n=1 before)
* 05.RW\_read\_results.py: Reads the resulting output file from RW\_propagation\_GPLSTM.py

*1. Random walk variance propagation*

Pretrain a GPLSTM for one step ahead prediction (shift=1). Running RW\_GPLSTM.py automatically safes the best-found checkpoint.

Run RW\_propagation\_GPLSTM.py and specify the checkpoint to load and the number of steps n\_steps and samples per step n\_samples. RW\_read\_results.py can then be used to plot the results.