The results are recreated using the following or later dependencies-

- cvxopt==1.2.5
- cvxpy==1.1.1
- numpy==1.18.5
- python==3.6.9

The parameters can be briefly explained as follows-

- self.d: Embedding dimension of trajectories(d=2 for polynomial and d=3 for bandlimited)
- self.P: Degree of polynomial model,
- self.omega: Base frequency of bandlimited trajectories. No need to change for polynomial model;
- self.mode: 1 for polynomial and 2 for bandlimited model,
- self.T_sampling: Sampling interval, where we can sample measurements([-1,1] for polynomial and [0,1] for bandlimited)
- self.T_estim: Estimate interval, where we estimate estimation error ([-1,1] for polynomial and [0,1] for bandlimited)
- self.N_sampling: Number of temporal samples, denoted by T in the paper,
- self.N_estim: Number of test samples to approximate estimation error e_X,
- self.K: Number of basis Gramians, 2P+1 for polynomial and 4P+1 for bandlimited model
- self.Nr: Number of time samples for positive semidefinite constraing G(t_i) >> 0,
- self.n_del: Number missing distances at a time,

- self.sampling: Sampling protocol: 1 for equi-distance, 2 for Chebyshev and 3 for random,
- Self.success_prob: Successful estimation threshold,
- self.std: Standard deviation of measurement noise,
- self.maxIter: Maximum number of iterations,
- self.n_del_init: Number of initial missing measurements (only use for estimating sparsity level),
- self.bipartite: Boolean parameter: True for bipartite and False for general measurement mask
- self.N0: Number of points in an independent set of a bipartite measurement mask,
- self.Pr: Probability of successful estimation,
- self.path: Save the results in this directory.

To recreate the results-

1.Please run kedm_ambg.py for kedm_ambiguity plots

2.Run plotting_errors.py for error plots after changing self.sampling to 1,2 and 3 and uncommenting X_nois in testErrors in Helper_Funcs and replacing X in below line with X_nois

3.Run sparsity_experiment.py by changing the file name in np.save and changing mode and P, and then run sparsity_plots.py.Uncomment the next 4 lines to run for mode=2(bandlimited).

4.Run sketch_experiment.py for mode=1 and mode=2, change d and P accordingly