

1. To run the entropy estimation, run the file script_entropy.py as python script_entropy.py [filename] [entropy_type] [seq_len](optional)

filename(str): path of the file with raw random data

entropy type(str): choose from

1) Bit Entropy(Calculated simply based on the number of 1s and 0s

in the input:

a) Shanon (bit_shanon)

b) Collision (bit_collision)

c) Minimum (bit_minimum)

d) Renyi Half (bit_renyi_half)

2) Accurate Minimum Entropy

a) Shanon (acc_min_shanon)

b) Collision (acc_min_collision)

c) Minimum (acc_min_minimum)

d) Renyi Half (acc_min_renyi_half)

seq_len(int) (if Accurate Minimum entropy is chosen): Length of the sub sequences to calculate the entropy with.

2. To run the Von Neumann extractor, run the file von_neumann.py as python von_neumann.py [filename]

filename(str): path of the file with raw random data

3. To run the matrix hashing extractor, run the file matrix_hash_ext.py as python matrix_hash_ext.py [filename] [matrix_file]

file_name(str): path of the file with raw random data

matrix_file(str): path of the file with the random seeded matrix

4. To generate a seed matrix from raw random source, run the file seed_2_matrix.py as python seed_2_matrix.py [f_in] [rows] [columns] [seed_buff]

f_in(str): path of the file with raw random data

rows(int): Number of rows of the matrix

columns(int): Number of columns of the matrix

seed_buff(int): Amount of space between each raw input taken from the file

Output: A file with the seed matrix with name 'seed_matrix.txt'. The rest of the files are intermediate files, so can be ignored.