

# Reproduction\_of\_other\_works

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**This code can be used as the supplemental material for the paper: "Towards a Lossless Conversion for Spiking Neural Networks with Negative Spike Dynamics". (Submitted to *Advanced Intelligent Systems*, Wiley, July, 2023) .**

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## Citation:

To be completed.

## Features:

- In many other works, they use various input encoding styles (e.g constant and poisson codes) and network training parameters which are different from ours, even there are no available open-source projects to reproduce their experimental results. Besides, in their works, **Signal Noise Ratio** (SNR) for spiking activities of SNNs was rarely discussed. Hence, we choose as many as possible reproducible works for comparison.

## File overview:

- **README.md** - this readme file.

**Other folders** include six kinds of different reproducible projects for SNR (input noise on datasets) experiments in our paper, please refer to the **noise\_ratio** character in their respective main function files.

## Requirements

### Dependencies and Libraries:

- python 3.8 (<https://www.python.org/> or <https://www.anaconda.com/>)
- tensorflow\_gpu 1.2.1 (<https://github.com/tensorflow>)
- tensorlayer 1.8.5 (<https://github.com/tensorlayer>)
- pytorch 1.7.1 (<https://pytorch.org/>)
- matlab R2017b (<https://www.mathworks.com/>)
- CPU: Intel(R) Xeon(R) CPU E5-2620 v4 @ 2.10GHz
- GPU: Tesla V100

**Please refer to their readme files for more information.**

## Installation:

To install requirements, **please refer to their readme files for more information.**

## Datasets:

- MNIST: [dataset](#), [preprocessing](#)
- FashionMNIST: [dataset](#), [preprocessing](#)

- CIFAR10: [dataset](#), [preprocessing](#)

## Run the code:

**Please refer to their readme files for more information.** Besides, you can refer to the `noise_ratio` character in their respective main function files.

## Online available open-source projects

Our provided six projects in this repository can be directly reproducible, and you can easily adjust the `noise_ratio` variable in their main function files for SNR experiments. Besides, you can refer to their original papers for more available information.

## Results

Please check these results in our paper.

## More question:

- There might be a little difference of results for multiple training repetitions, because of the randomization.
- Please feel free to reach out here or email: 1801111301@pku.edu.cn, if you have any questions or difficulties. I'm happy to help guide you.