

Reproduction of cloneofsimon/minRF: rectified-flow DiT on MNIST

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Independent reproduction · Benchmark or leaderboard entry · Machine learning

Abstract

Ran rf.py at the pinned commit, unchanged, in its default MNIST setting: a class-conditional rectified-flow model with a small DiT (Llama-style, dim 64, 6 layers, 0.61M parameters), Adam at learning rate 5e-4, batch size 256, 100 epochs, sampling 16 images after each epoch. The reported values are the per-epoch training losses rf.py prints for ten bins of the flow time t. wandb was disabled and the sample GIFs are withheld as hash-only entries (the last-frame PNGs are kept). The repository's CIFAR-10 setting (--cifar, 13.3M parameters) was attempted but ran out of memory on its first step at its fixed batch size of 256 on this 16 GB GPU, so it is not part of this record. PyTorch 2.11 (CUDA 12.8). One NVIDIA RTX 5060 Ti.

About this record

Title, authors and abstract were provided by the authors and reviewed for completeness, not for scientific soundness. Every number in this record is copied from the signed data of the sealed reports [2], which remain authoritative.

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1 Sealed reports

The experiments were sealed with K-Veritas [1], which binds each result to the code, hardware and time that produced it.

Report	Label	Sealed	Runs	Invocations	Signer
r1 [2]	minRF: rectified-flow DiT, M...	2026-10-11	1	1	Signed by the K-Veritas server

2 Results

r1: minRF: rectified-flow DiT, MNIST 100 epochs

Run	Metric	Final value	Step
1	mnist_mean_bin_loss	0.118766	99

Run	Inline claim	Value	Phase
1	mnist_final_mean_bin_loss	0.118766	
1	mnist_final_bin0_loss	0.110813	
1	mnist_final_bin5_loss	0.095862	
1	mnist_final_bin9_loss	0.187066	

3 Setup

Report	Item	Value
r1	Operating system	linux / amd64
r1	CPU	Intel(R) Xeon(R) W-2145 CPU @ 3.70GHz, 16 cores
r1	GPU	NVIDIA GeForce RTX 5060 Ti, 16311 MiB
r1	Memory	31.0 GB
r1	Total run time	4583.6 s

4 Files

Each report and code bundle must hash to these values. A bundle belongs to the report whose signed data names its hash.

File	SHA-256	Size
r1.pdf	3d273e8496f1aba78d8a6d48756358a7c511e15d06d620a4e7fb3e118035862f	6.8 MB
r1.kvbundle.zip	cdca2c46d5b235508c8ba4bbfcaa574fa38abf2915b92f1ce0582e6050c2fc85	13.9 MB

5 Links and licence

Reproduction of: <https://github.com/cloneofsimo/minRF/tree/4fc10e0cc8ba976152c7936a1af9717209f03e18>

Record: CC-BY 4.0. Code: Apache-2.0, as declared by the authors. Tags: rectified-flow, diffusion, dit, mnist.

Listed, not endorsed. Review checks the artifact, never the science. Reports are never edited; changing them makes a new version. Other fields are corrected in place, and every correction is logged in metadata.yaml.

References

[1] M. K. Keita and C. Homan. Computer Science Conferences Should Require Nonrepudiable Experimental Results. NeurIPS 2026 Position Paper Track. arXiv:2605.08586.

[2] Sealed experiment report r1 (minRF: rectified-flow DiT, MNIST 100 epochs), kv:2610.00044v1/r1. Data hash f105ddf31520ef52e26955ad38d44cd2e732a78685afe112c514b19c80474ec8.

<https://kveritas.org/records/2610.00044v1/r1.pdf>