Notes on Flow Matching and Diffusion Models

compiled by D.Gueorguiev, 9/13/2025

We will be discussing two widely used generative AI algorithms: denoising diffusion models, and flow matching.

# References

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[3] [Score-Based Generative Modeling through Stochastic Differential Equations, Yang Song et al, Stanford U., 2021](https://github.com/dimitarpg13/information_theory_and_statistical_mechanics/blob/main/literature/articles/generative_models/Score-Based_Generative_Modeling_through_Stochastic_Differential_Equations_Song_2021.pdf)

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[5] [Flow Straight and Fast: Learning to Generate and Transfer Data with Rectified Flow, X. Liu et al, 2022](https://github.com/dimitarpg13/information_theory_and_statistical_mechanics/blob/main/literature/articles/generative_models/Flow_Straight_and_Fast-Learning_to_Generate_and_Transfer_Data_with_Rectified_Flow_Liu_2022.pdf)

[6] [Stochastic Interpolants: A Unifying Framework for Flows and Diffusions, Michael S. Albergo et al, 2023](https://github.com/dimitarpg13/information_theory_and_statistical_mechanics/blob/main/literature/articles/generative_models/Stochastic_Interpolants-A_Unifying_Framework_for_Flows_and_Diffusions_Albergo_NYU_2023.pdf)

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[8] flow\_matching library at <https://github.com/facebookresearch/flow_matching>