Diffusion-based Latent Image Generation with Label Conditioning: A Score-Based Approach

Supervisor: Dr. Mohammad Ashrafuzzaman khan

Jiaul Haque Saboj, Sadia Sifati Shammee, Tawsif Mahmud

Department of Electrical and Computer Engineering, North South University

ABSTRACT

We represent a score-based strategy for creating images incorporating label conditioning, diffusion models, and latent space modeling. Our method produces a wide range of high-quality images that match particular labels by utilizing diffusion models and taking label information into account. We iteratively update the latent space via score estimation to obtain precise label representation. Experiment results show how well our method produces realistic images with fine-grained label control. Our scorebased methodology provides a flexible framework for precise label-guided image production, opening up possibilities in computer vision and artistic design.

METHODOLOGY

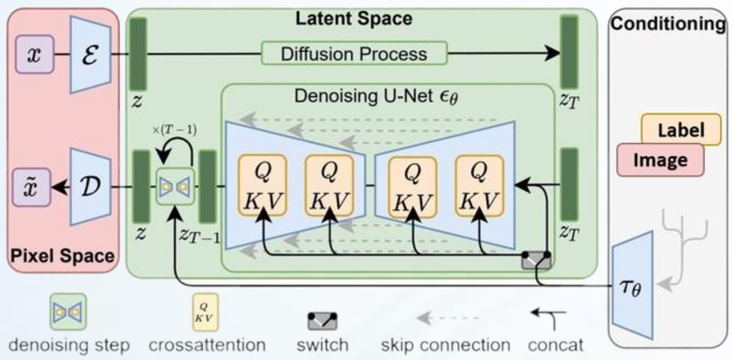

Figure: System Diagram

Materials

We represent a score-based strategy for creating images incorporating label conditioning, diffusion models, and latent space modeling. Our method produces a wide range of high-quality images that match particular labels by utilizing diffusion models and taking label information into account. We iteratively update the latent space via score estimation to obtain precise label representation. Experiment results show how well our method produces realistic images with fine-grained label control. Our scorebased methodology provides a flexible framework for precise label-guided image production, opening up possibilities in computer vision and artistic design.

Add your information, graphs and images to this section.

Conclusion

Add your information, graphs and images to this section.

We represent a score-based strategy for creating images incorporating label conditioning, diffusion models, and latent space modeling. Our method produces a wide range of high-quality images that match particular labels by utilizing diffusion models and taking label information into account. We iteratively update the latent space via score estimation to obtain precise label representation. Experiment results show how well our method produces realistic images with fine-grained label control. Our scorebased methodology provides a flexible framework for precise label-guided image production, opening up possibilities in computer vision and artistic design.

Recommendations

Acknowledgements

Add your information, graphs and images to this section.