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GPP SSR Course

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Dinh, L., Sohl-Dickstein, J., & Bengio, S. (2017). Density estimation using Real NVP. In Proceedings of the 2017 International Conference on Learning Representations.

Most data in real life is high-dimensional. A middle-sized image, for example, contains at least thousands of dimensions. Such high-dimensional space would contain more dependencies and structures compared with the lower-dimensional space and therefore is more difficult to be modeled. For these reasons, most of the statistical methods proposed before have to use the approximate methods to estimate the probability. This paper focused on the problem of how to enable the exact and tractable log-likelihood estimation of observed data without damaging the model flexibility, which is important in my field.

This paper would provide a theoretical foundation for all the other parts of my poster. It described a general invertible density method for high-dimensional data modeling and can be applied to a large number of applications where the input dimension cannot be well modeled by other approaches. In the final poster, I will describe this method, as well as several of the typical applications in natural language processing.