

先端科学技術研究科 修士論文要旨

所属研究室 (主指導教員)	数理情報学 (池田 和司 (教授))		
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論文題目	The Generalized Denoising Autoencoder with Tweedie's Formula		
要旨			
<p>Denoising autoencoders learn the score of the data-generating distribution, i.e., $-\nabla \log p(x)$. However, theoretical studies have discussed only the case when the corruption process is Gaussian. To generalize the results, in this thesis, we extend the class of distribution to an exponential family. By using Tweedie's formula, we show that the optimal solution of this generalized DAE that learns the score of the marginal distribution $q(\tilde{x}) = \int q(\tilde{x} x)p(x)dx$ instead of the score of the data-generating distribution $p(x)$. Furthermore, we prove that this marginal score is equivalent to the entropy reduction of the corruption process.</p>			