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MASTER'S THESIS PRESENTATION

Exploring Joint and Layerwise Training of Hybrid Autoencoder Architectures

WHEN

May, 12, 2021
9:00 AM, CDT

WHERE

Via ZOOM

ZOOM information will be provided in the email announcement for this seminar.



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Modern deep learning systems have proposed the sequential combination of unsupervised pre-training and supervised fine-tuning as a means of improving model performance on classification tasks. A common unsupervised task is that of input reconstruction. However, improved classification ability is not guaranteed despite increased time and computational requirements. More importantly, the model also loses its ability to reconstruct the inputs in the process of fine-tuning. To circumvent these issues, we explore the viability of jointly training a hybrid classifier-autoencoder architecture on a weighted combination of supervised and unsupervised loss. In addition, we consider training such a model in a layerwise manner, starting with the outermost encoder-decoder pairs and moving deeper into the network. Our preliminary findings suggest that both the joint and layerwise training schemes produce classification results comparable to those of a regular classification training scheme, and provides practitioners with an additional ability to reconstruct inputs.

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