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# Deep Learning Applications in Science using Transfer Learning

*Friday, September 1, 2017 9:40 AM (40 minutes)*

Deep learning models like convolutional neural networks (CNNs) deliver highly accurate results in classification tasks but require large enough data sets and good corresponding labels. However, one key problem in science and engineering is that data sets unfortunately have often only limited labeled data. Using CNNs together with such data sets can be problematic because it can lead to enourmous overfitting thus loosing much of the generalization capability of the model. The talk informs about research methods of using generic representations from deep learning networks that can facilitate transfer learning between different domains in cases where limited amount of labeled data is available. Examples are given in the scientific domain of remote sensing where the availability of labels is scarce and would involve extended efforts and costs for acquiring like performing ground truth campaigns.

**Presenter:**   Prof. RIEDEL, Morris (FZ Jülich)

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