

Off-Line Math Formula Recognition Using Deep Neural Networks

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The most promising approach for handwritten mathematical expression recognition is an attention based Encoder-Decoder model. Off-line handwritten mathematical expression recognition is a particularly difficult problem to be solved, where images of mathematical expressions are translated into Latex strings. With just the image and no additional information it is vital to correctly locate and identify the symbols and structures of mathematical constructs. A multi-scale attention model is used to improve the detection of fine grained details. To understand the model, it is broken down into its components and each building block is described in detail. Training and validation of the model is done on the official datasets of the CROHME competition tasks. The primary focus lies on the behaviour of the attention in various situations. Having the additional high resolution attention opens up more possibilities to detect structural properties. Its effect and significance are studied and evaluated.

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