

EFFICIENT TRAINING OF DEEP NEURAL NETWORKS

[MACHINE TRANSLATION]

THE “BUZZ”!

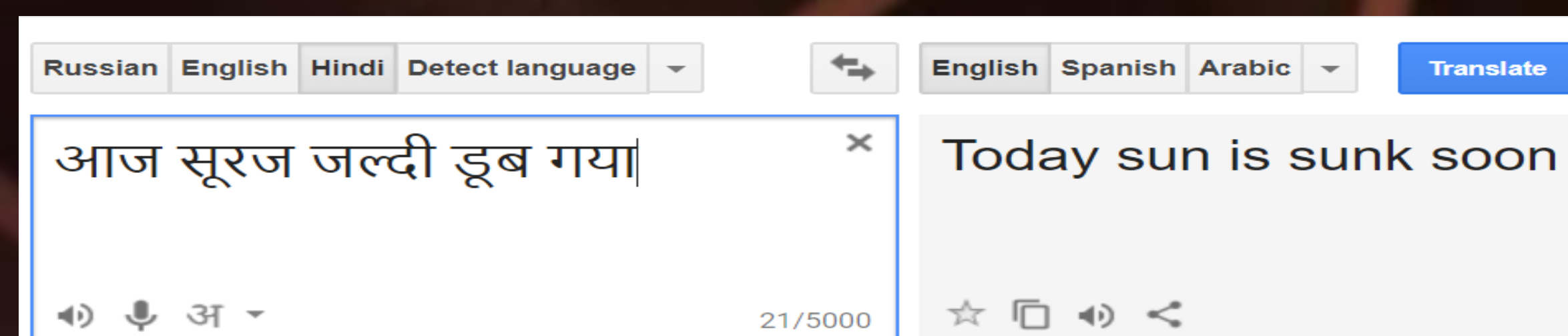
Deep Neural Networks have achieved near-human accuracies in a range of applications. AlexNet brought a breakthrough in ImageNet Challenge, and in last 7 years, performance error has reduced by a factor of 10!

Broadening with GoogLeNet and massive deepening with ResNet are the major advances in Deep Learning. The smart learning and computational capabilities make the “*buzz*” well-deserved.

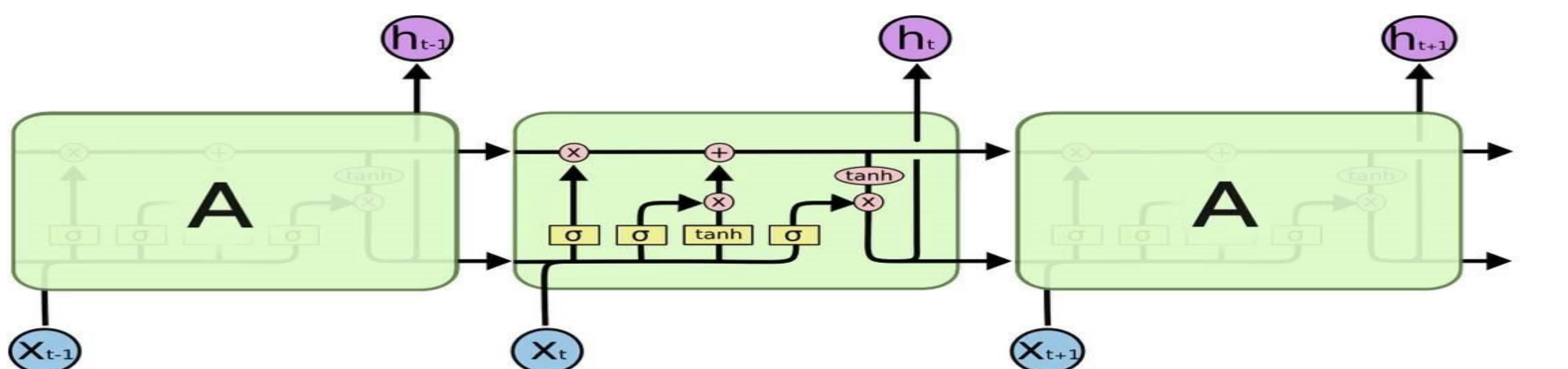
LSTM

AIM & MOTIVATION

The main aim is to build a Machine Translator for *Hindi* to English languages, using Deep Neural Networks. Hindi, being spoken by over 1.3 billion people, often requires translation to English, due to increasing globalisation. On an average, state-of-the-art machines have exhibited a BLEU score in the range 25-35. The idea is to improve this score as some of these translations do not always achieve perfection. One such example:



Long-Short Term Memory module: LSTM



long-short term memory modules used in an RNN

METHODOLOGY

- 1) Exploring efficient training methodologies in terms of Deep Networks
- 2) Empirical implementations of learning algorithms and hyperparameter tuning
- 3) Implementing the Sequence to Sequence approach by Google
- 4) Training bi-directional LSTMs and testing appropriate Recurrent Neural Network techniques, considering a BLEU score of 36.5 was achieved using LSTMs for other language pairs.
- 5) Compare results and enhance by using active learning methodology

EXPECTED RESULTS

Smooth and meaningful translation between Hindi and English, Better BLEU score than state-of-the-art translator models.

CONTACT

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