The document discusses a fast multi-language LSTM-based online handwriting recognition system. The system is capable of supporting 102 languages using a deep neural network architecture. It has replaced a previous system and achieved a 20-40% reduction in error rate for most languages. The system utilizes methods from sequence recognition and introduces a new input encoding technique using Bézier curves, resulting in faster recognition times.

The importance of online handwriting recognition is highlighted, particularly due to the increasing number of people using mobile devices with touchscreens. The document provides a detailed description of the system's architecture, including the input representation, bidirectional LSTM recurrent neural networks, softmax layer, and decoding process. The system is trained using the connectionist temporal classification (CTC) loss and incorporates language models and character classes to enhance recognition accuracy.

Experimental results on various datasets, such as IAM-OnDB, IBM-UB-1, and Vietnamese datasets, demonstrate the improved performance of the system compared to previous systems and the state-of-the-art. The system outperforms other systems in terms of character error rate (CER) and word error rate (WER) on these datasets.

The document also discusses the differences between the datasets and the performance of the system on each dataset. It provides insights into the training methodologies, feature functions, and decoding algorithms used in the system. The system's performance is evaluated in both closed data scenarios, where models are trained and tested on public datasets, and open data scenarios, where the model is trained on proprietary data.

The document concludes by highlighting the advantages of the new system, including its faster recognition times, improved accuracy, and support for a wide range of languages. It acknowledges the contributions of various individuals and teams in the development of the system. The article is licensed under a Creative Commons Attribution 4.0 International License, allowing for the use, sharing, adaptation, distribution, and reproduction of the content with appropriate credit given to the original authors.