Literature Review

# Deep Learning for Medical Information Extraction

A breakthrough study by Cireşan et al. (2013) introduced deep learning for medical information extraction. The study applied Recurrent Neural Networks (RNNs) and Long Short-Term Memory (LSTM) networks to extract medical concepts from clinical notes, focusing on identifying metastatic breast cancer from imaging and text data. Their work demonstrated how deep learning can be effectively used in clinical text processing and automated diagnosis.

Reference: Cireşan, D. C., Giusti, A., Gambardella, L. M., & Schmidhuber, J. (2013). Deep Learning for Identifying Metastatic Breast Cancer. Proceedings of the IEEE International Conference on Computer Vision (ICCV), 2013. DOI: 10.1109/ICCV.2013.69 (https://doi.org/10.1109/ICCV.2013.69)

Another important contribution to medical information extraction using LSTM networks was made by Lee et al. (2020). Their study focused on the use of deep learning models like LSTMs to extract key medical entities such as diseases, symptoms, and medications from clinical texts. This research has significant implications for improving decision support systems in healthcare by extracting structured information from unstructured data.

Reference: Lee, J., Yoon, W., Kim, S., Kim, D., & So, C. H. (2020). Clinical Text Analysis and Applications in Real-World Healthcare. Journal of Healthcare Informatics Research. DOI: 10.1007/s41666-020-00081-5 (https://doi.org/10.1007/s41666-020-00081-5)