Delivering Optimal Performance for Fletchers Solicitors

Fletchers Solicitors is a legal firm specialising in personal injury litigation. Established in 1987, Fletchers has grown substantially over the years with its the mission of doing the best for its customers keeping them ahead of the competition. While its reputation is now one of the best in the field, Fletchers Solicitors required a suitable partner to perform data labelling and performance experiments for a project.

Fletchers has been working with the University of Liverpool on a Knowledge Transfer Partnership whose success spun-out a number of Natural Language Processing (NLP) research questions. The Centre for AI Solutions (CAIS), sitting within the flagship Institute for Digital Engineering and Autonomous Systems (IDEAS), was commissioned by Fletchers to help with identifying occurrences of medical events in a corpus of doctors' consultation notes.

CAIS undertook labelling of the data using Dataturks [1], an open-source, web-based labelling tool and undertaking a number of experiments employing the use of a Bilateral Long Short Term Memory (Bi-LSTM) network [2], a type of recurrent neural network architecture capable of learning long-term dependencies. LSTMs have feedback connections, not only can they process single data points (such as images), but also entire sequences of data (such as speech or video).

Experiments were conducted on GPUs via Google Colaboratory and the university's in-house High-Performance Compute (HPC) cluster ("Barkla"). Barkla offers 136 compute nodes (CPU and GPU). The exhaustive testing carried out by CAIS enabled Fletchers to observe the behaviour of the algorithm with changing model parameters, with accuracies achieved of over 95%. This new information will enable Fletchers to employ AI to extract relevant information from medical correspondence in support of their clients.

For further information on how CAIS can work with you to deliver appropriate AI software solutions, please contact us:

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References

[1] GitHub. 2020. *Dataturks/Dataturks*. [online] Available at: <https://github.com/DataTurks/DataTurks> [Accessed 15 May 2020].

[2] Colah.github.io. 2020. *Understanding LSTM Networks -- Colah's Blog*. [online] Available at: <http://colah.github.io/posts/2015-08-Understanding-LSTMs/> [Accessed 15 May 2020].