**References**

[1] De Fauw, J., Ledsam, J.R., Romera-Paredes, B., Nikolov, S., Tomasev, N., Blackwell, S., Askham, H., Glorot, X., O-Donoghue, B., Visentin, D., and van den Driessche, G. Clinically applicable deep learning for diagnosis and referral in retinal disease. In *Nature medicine, VOL 24, NO. 9*, page 1342.

[2] *NHS Hospitals Turn to Deep Learning and Advanced Algorithms to Fight Heart Disease* (2018). Available at: <https://www.heartflow.com/newsroom/nhs-hospitals-turn-to-deep-learning-and-advanced-algorithms-to-fight-heart-disease>. Accessed: 26th August 2019.

[3] Hsu, J. (2019) ‘Will Artificial Intelligence Improve Health Care for Everyone?’, *Smithsonian* (31st July 2019). Available at: <https://www.smithsonianmag.com/innovation/will-artificial-intelligence-improve-health-care-for-everyone-180972758/>. Accessed 26th August 2019.

[4] Sayers, M., Brogan, C. ‘AI trial to help accelerate future treatments for Duchenne muscular dystrophy’. Available at <https://www.imperial.ac.uk/news/184530/ai-trial-help-accelerate-future-treatments/>. Accessed (22nd Aug 2019).

[5] *Duchenne Muscular Dystrophy (DMD)* (no date). Available at: <https://www.mda.org/disease/duchenne-muscular-dystrophy>. Accessed: 5th Aug 2019.

[6] *What is Duchenne?* (no date). Available at: <https://www.duchenneuk.org/pages/faqs/category/what-is-duchenne>. Accessed: 6th Aug 2019.

[7] *Muscular dystrophy – NHS* (2018). Available at: <https://www.nhs.uk/conditions/muscular-dystrophy/>. Accessed: 5th Aug 2019.

[8] *North Star Ambulatory Assessment* (no date). Available at: <https://www.physio-pedia.com/North_Star_Ambulatory_Assessment>. Accessed 13th Aug 2019.

[9] Mazzone, E.S., Messina, S., Vasco, G., Main, M., Eagle, M., D’Amico, A., Doglio, L., Politano, L., Cavallaro, F., Frosini, S., and Bello, L. Reliability of the North Star Ambulatory Assessment in a multicentric setting. In *Neuromuscular Discorders*, *19(7)*, pages 258-261, 2009.

[10] Mayhew, A., Cano, S., Scott, E., Eagle, M., Bushby, K., and Muntoni, F. On Behalf of the NorthStar Clinical Network for Paediatric Neuromuscular Disease: Moving towards meaningful measurement: Rasch analysis of the North Star Ambulatory Assessment in Duchenne muscular dystrophy. *Dev Med Child Neurol*, *52*, pages 535-542, 2011.

[11] *KineDMD Study: developing an activity monitoring biomarker* (2019). Available at: <https://www.duchenne.org.uk/project/activity-monitoring-biomarker/>. Accessed (22nd Aug 2019).

[12] Goodfellow, I., Bengio, Y, and Courville, A. *Deep Learning*. MIT Press, 2016

[13] Olah, C. ‘Understanding LSTM Networks’. *colah's blog*, 27th August 2015. Available at: <https://colah.github.io/posts/2015-08-Understanding-LSTMs/>.

[14] *API Documentation*. Available at: <https://www.tensorflow.org/api_docs> (Accessed 27th August 2019).

[15] Raschka, S. *Python Machine Learning*. Pack Publishing Ltd, 2015.

[1] Inoue, M., Inoue, S., and Nishida, T. Deep recurrent neural network for mobile human activity recognition with high throughput. *Artificial Life and Robotics, VOL 23, NO. 2*, pages 173-185, 2018.

[2] Hammerla, N. Y., Halloran, S., and Plötz, T. Deep, convolutional, and recurrent models for human activity recognition using wearables. *arXiv preprint arXiv:1604.08880*, 2016.

[3] Du, Y., Wang, W., and Wang, L. Hierarchical recurrent neural network for skeleton based action recognition. In *Proceedings of the IEEE conference on computer vision and pattern recognition*, pages 1110-1118, 2015.

[4] Veeriah, V., Zhuang, N., and Qi, G. Differential Recurrent Neural Networks for Action Recognition. In *ICCV****,*** *2015*.

[5] Ordóňez, F. J., and Roggen, D. Deep Convolutional and LSTM Recurrent Neural Networks for Multimodal Wearable Activity Recognition. In *Sensors, VOL 16, NO. 1*, page 115, 2016.

[6] Zhu, W., Lan, C., Xing, J., Zeng, W., Li, Y., Shen, L., and Xie, X. Co-Occurrence Feature Learning for Skeleton Based Action Recognition Using Regularized Deep LSTM Networks. In *Thirtieth AAAI Conference on Artificial Intelligence*, 2016.

[7] Molchanov, P., Yang, X., Gupta, S., Kim, K., Tyree, S., and Kautz, J. Online Detection and Classification of Dynamic Hand Gestures with Recurrent 3D Convolutional Neural Networks. In *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition*, 2016.

[8] Baccouche, M., Mamalet, F., Wolf, C., Garcia, C., and Baskurt, A. Sequential Deep Learning for Human Activity Recognition. In *International Workshop on Human Behaviour Understanding*, pages 29-39, 2011.

[9] Donahue, J., Hendricks, L. A., Guadarrama, S., Rohrbach, M., Venugopalan, S., Saenko, K., and Darrell, T. Long-term Recurrent Convolutional Networks for Visual Recognition and Description. In *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition*, 2014.

[10] Liu, J., Shahroudy, A., Xu, D., and Wang, G. Spatio-Temporal LSTM with Trust Gates for 3D Human Action Recognition. In *European Conference for Computer Vision*, pages 816-883, 2016.

[13]Mazzone, E., Martinelli, D., Berardinelli, A., Messina, S., D’Amico, A., Vasco, G., Main, M., Doglio, L., Politano, L., Cavallaro, F., and Frosini, S. North Star Ambulatory Assessment, 6-minute walk test and timed items in ambulant boys with Duchenne muscular dystrophy. *Neuromuscular Disorders*, pages 712-716, 2010.

[14] Ricotti, V., Ridout, D.A., Pane, M., Main, M., Mayhew, A., Mercuri, E., Manzur, A. Y., and Muntoni, F. The NorthStar Ambulatory Assessment in Duchenne muscular dystrophy: considerations for the design of clinical trials. *J Neurol Neurosurg Psychiatry*, pages 149-155, 2016.