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Literature Review Outline

Course: MSc Computer Science

Module: Research Methods and Professional Practice

Assignment: Literature Review Outline

Date: Sunday 27th March 2022

Student ID: 126853

Literature Review Outline:

Due to the broad nature of Machine Learning as a whole, my literature review will be focused on Computer Vision and Neural Network's – and how these technologies can be used for Image Classificiation, in particular, Human, Animal and Plants. In the earlier days of this technology, services such as Google's reCAPTCHA have been used as a discrete method of using end-users to classify a series of images (Such as vehicles, animals and landscape attributes) under the precept that it will act as a security method for protecting the website in use (O'Malley, 2018). Although this technology has been around for some time, it has only just reached a level of capability that could be considered effective enough for delivery to the end-consumers, such as the constantly-learning technology developed as part of Tesla's autopilot system (Bouchard, 2019).

I aim aiming to include a series of sources that show the progression of these technologies over a period of time, such as the examples described above (reCAPTCHA -> Tesla). These should demonstrate the evolution of the technology over time, transitioning from a stage where developers are required, to a stage at which this 'emerging trend' has hit consumerisation.

For the purpose of information gathering for the full literature review, I will be using a wide range of resources, including those published by commercial providers (Such as Google), as well as academic material such as research papers and journals. My focus will be predominantly on the quantitative statistics surrounding both, the usage, and effectiveness of ML technologies in image classification, whilst maintaining a

small focus on the qualitative aspects, such as the ethical issues that could be posed in the event of a technology failure. Sources used in my final document will be prioritised for inclusion based on their links to the topic as a whole, as well as academic reliability (Using peer-reviewed documents before commercially available & potentially biased resources).

References:

Bouchard, Y. (2019) Tesla's Deep Learning at Scale: Using Billions of Miles to Train Neural Networks. Available from: https://www.techradar.com/uk/news/captcha-if-you-can-how-youve-been-training-ai-for-years-without-realising-it

O'Malley, J. (2018) Captcha if you can: how you've been training AI for years without realising it. Available from: https://www.techradar.com/uk/news/captcha-if-you-can-how-youve-been-training-ai-for-years-without-realising-it [Accessed 27th March 2022].