Youssef Alchaer

Dr. Ghassem Tofighi

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Extensive research for Abalone: The analysis of other AI specialists

For the research conducted by Sam Waugh he aimed to give an estimation of the abalone age bases on measured attributes. Based on his finding, “his may be generalized to information such as, for example, whether the abalone grew in an area exposed to colder ocean water — a factor quite important to the abalone growth rates. In further trials, site information was included and used to train Cascor networks, resulting in improvements of up to five percent in the classification performance as expected.” [1] page 105

For the second paper, it dives deep into the regression algorithm it’s self in that you get the Diagram

Description automatically generated with low confidence which the mathematical formula used in the regression. “ The most important property of RPFP is that it is a projection-based approach that can handle interactions. We show that it outperforms existing eager or lazy approaches on many domains when there are many missing values in the training data.” [2]. He also compares it to other models in which performance was less and the results were more skewed towards error. On the other hand Wray buntine and G. Gray took a different approach “We present automatically-derived algorithms ranging from closed-form solutions of Bayesian textbook problems to recently-proposed EM algorithms for clustering, regression, and a multinomial form of PCA.” [3] With that said we conclude that the regression algorithm was in fact the most appropriate for the research project.

Works Cited

[1] Waugh, S. G. (1995, January 1). Extending and benchmarking cascade-correlation : Extensions to the Cascade-correlation architecture and benchmarking of feed-forward supervised artificial neural networks. Extending and benchmarking Cascade-Correlation : extensions to the Cascade-Correlation architecture and benchmarking of feed-forward supervised artificial neural networks - Open Access Repository. Retrieved November 30, 2022, from <https://eprints.utas.edu.au/21965/>

[2] Uysal, İlhan & Güvenir, Halil Altay. (2004). Instance-Based Regression by Partitioning Feature Projections. Appl. Intell.. 21. 57-79. 10.1023/B:APIN.0000027767.87895.b2 <https://papers.nips.cc/paper/2002/file/0234c510bc6d908b28c70ff313743079-Paper.pdf>

[3] Gray, Alexander G., Fischer, Bernd, Schumann, Johann and Buntine, Wray (2003) Automatic Derivation of Statistical Algorithms: The EM Family and Beyond. Becker, Suzanna, Thrun, Sebastian and Obermayer, Klaus (eds.) Neural Information Processing Systems 15, Vancouver, BC. 09 - 14 Dec 2002. pp. 689-696 . <https://eprints.soton.ac.uk/262683/>