EVOL-AUTONN: EVOLUTIONARY AUTOMATION OF NEURAL NETWORK

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A dissertation submitted in partial fulfilment of the requirement for Bachelor of Engineering (Honours) degree in Software Engineering.

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in Collaboration with

University of Westminster, UK

2021

Abstract

Evol-AutoNN is biomimicry approach to automate the neural network for tabular data using the two biological concepts came from the nature. Biological evolution and the neural network in the human brain are the two-concept used. As the domain of data science keeps on growing, the demands for the tools that make the data science approachable to non-experts will be ever increased. Biomimicry is a new procedure to do the innovation which tries to give strong solutions to human problem by mimicking the patterns and strategies identified in the nature.

Triumph of neural network depends on finding the best architecture. An architecture which fundamentally contain the quantity of the neurons in the layer and the activation functions used in them. As the fundamental can be seem as manageable but with scaling up with the workflow makes complicate for both the technical and non-technical stakeholders to do manually.

Evol-AutoNN is developed to solve the issues mentioned above. It provides novel approach in finding the initial best setting for the user. The user also had the control of selecting the budget which decide the time duration of computational power due to the high concern about computational power. The user has the option in controlling the ranges in the algorithm. EvolAutoNN imitates the process followed in both the natural selection and genetics. It is available as open source which enables everyone to access.

Keywords: AutoNN, Genetic Algorithm, Chromosomes, Genetic operations, neurons.