Distributed Creation of Machine Learning Agents for Blockchain Analysis

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Creating efficient deep neural networks involves repetitive manual optimization of the topology and the hyperparameters. This human intervention significantly inhibits the process. Recent publications propose various Neural Architecture Search (NAS) algorithms that automate this work. We have applied a customized NAS algorithm with network morphism and Bayesian optimization to the problem of cryptocurrency predictions, where it achieved results on par with our best manually designed models. This is consistent with the findings of other teams, while several known experiments suggest that given enough computing power, NAS algorithms can surpass state-of-the-art neural network models designed by humans. In this paper, we propose a blockchain network protocol that incentivises independent computing nodes to run NAS algorithms and compete in finding better neural network models for a particular task. If implemented, such network can be an autonomous and self-improving source of machine learning models, significantly boosting and democratizing the access to AI capabilities for many industries.

Awards Won:
Innopolis University : Full tuition scholarships for the Bachelor program in Computer Science
GoDaddy: $750 Make Your Own Way Award
King Abdulaziz &amp
his Companions Foundation for Giftedness and Creativity: Award of $1500 in Machine Learning in Real-World Bio-engineering Applications