

IEEE Symposium on Evolutionary Neural Architecture Search and Applications (IEEE ENASA)

Submitted by grigby1 on Thu, 03/11/2021 - 1:14pm

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"Deep neural networks based deep learning has shown significantly promising performance in addressing real-world problems, such as image recognition, natural language processing and self-driving. The achievements of such algorithms owe to its deep neural architectures. However, designing an optimal deep architecture for a particular problem requires rich domain knowledge on both the investigated data and the neural network domain, which is not necessarily held by the end-users. In addition, the problem of searching for the optimal architecture could be non-convex and nondifferentiable, and existing accurate methods are incapable of well addressing it. Furthermore, the deep architecture defined for the task is not reusable, i.e., a new one must be redesigned for data with a slightly changed scenario and/or unseen data. Evolutionary computation (EC) approaches, particularly genetic algorithms (GAs), particle swarm optimization (PSO) and genetic programming (GP), have shown superiority in addressing real-world problems due largely to their powerful abilities in searching for global optima, dealing with non-convex/non-differentiable problems, and requiring no rich domain knowledge. However, most of the existing EC methods cannot provide satisfactory results in searching for deep architectures. In this regard, deep neural architecture designed by EC approaches, i.e., evolutionary neural architecture search, would be a great research topic. The theme of this symposium aims to bring together researchers investigating methods and applications in evolutionary neural architecture search. Particularly, the methods focus on effective and efficient encoding strategy, recombination mechanisms and fitness evaluation techniques."

Topics of interest include real-world applications of evolutionary neural architecture search in network security.

Event Details

Location: Virtual and in Orlando, FL

URL: <https://attend.ieee.org/ssci-2021/ieee-symposium-on-evolutionary-neural-architec...>

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