Research Article

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Surrogate assisted diversity estimation in NES

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Abstract: The automated search for optimal neural network architectures is a challenging computational problem, and Neural Ensemble Search (NES) is even more complex. In this work, we propose a surrogate-based approach to estimate ensemble diversity. Neural architectures are represented as graphs, and their predictions on a dataset serve as training data for the surrogate function. Using this method, we develop an efficient NES framework that enables the selection of diverse and high-performing architectures. The resulting ensemble achieves superior predictive accuracy on CIFAR-10 compared to other one-shot NES methods, demonstrating the effectiveness of our approach.

Keywords: NES, GCN, triplet loss, surrogate function.

1 Introduction

References