

Abstract

This application embodiment relates to the field of neural architecture search technology, particularly to an apparatus and method for collaborative neural network search. The apparatus includes a first node for providing a
5 preset search space and dataset; a second node for generating a variational autoencoder and partitioning the search space; at least two cooperating third nodes; the third node is used to determine the performance of multiple candidate neural architectures, train a performance predictor, and update the
10 embedding position based on the gradient direction provided by the performance trainer, wherein data information is shared between different third nodes. By using the variational autoencoder, the third node can hypothesize that similar unit structures/neural architectures have similar performance on the same dataset when conducting the search, collaboratively searching for the best neural architecture (by broadcasting the
15 evaluation results of its neural architecture) and achieving effective evaluation of different neural architectures.

[FIG. 1]