Special Issue

AutoML: Advances and Applications

Message from the Guest Editors

The proliferation of machine learning in a myriad of domains has allowed researchers and practioners to harness its potential in scientific research beyond the immediate purview of computer science, such as drug interaction prediction, traffic pattern prediction, image recognition and natural language processing in medical or legal texts. Applications of ML, however, come with the tasks of (1) formulating abstract problem in terms of ML, (2) obtaining knowledge to select the right ML model with the correct hyperparameters, (3) preparing the data, (4) training the models, and (5) extracting the output. Automated machine learning lowers the barrier to utilizing ML for research purposes by a wider audience, eliminating the need to have AI/ML experts use advanced ML or deep learning models. AutoML provides methods and processes to make ML available for non-ML experts, to improve the efficiency and efficacy of ML and to democratize ML. The AutoML literature includes, but is not limited to the following topics: (1) hyperparameter optimization, (2) neural architecture searching, (3) ML model selection, (4) transfer learning, (5) data preprocessing, and (6) postprocess ML models.

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Message from the Editor-in-Chief

As the world of science becomes ever more specialized, researchers may lose themselves in the deep forest of the ever increasing number of subfields being created. This open access journal Applied Sciences has been started to link these subfields, so researchers can cut through the forest and see the surrounding, or quite distant fields and subfields to help develop his/her own research even further with the aid of this multi-dimensional network.

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