Automated Machine Learning (AutoML)

Wikipedia: **Automated machine learning (AutoML)** is the **process of automating the process** of **applying machine learning to real-world problems**. **AutoML** covers the **complete pipeline** from the **raw dataset** to the deployable **machine learning model**.

AutoML was proposed as an **artificial intelligence-based solution** to the **ever-growing challenge of applying machine learning**.

Automating the process of applying machine learning end-to-end additionally offers the **advantages** of **producing simpler solutions**, **faster creation** of those solutions, and models that often **outperform hand-designed models**.

Google's Artificial Intelligence Built an AI That Outperforms Any Made by Humans

It's more accurate and more efficient than any other system.

DOM GALEON | DECEMBER 1ST 2017

An AI That Can Build AI

In May 2017, researchers at Google Brain announced the creation of AutoML, an artificial intelligence (AI) that's capable of generating its own AIs. More recently, they decided to present AutoML with its biggest challenge to date, and the AI that can build AI created a "child" that outperformed all of its human-made counterparts.

The Google researchers automated the design of machine learning models using an approach called reinforcement learning. AutoML acts as a controller neural network that develops a child AI network for a specific task. For this particular child AI, which the researchers called NASNet, the task was recognizing objects — people, cars, traffic lights, handbags, backpacks, etc. — in a video in real-time.

According to the researchers, NASNet was 82.7 percent accurate at predicting images on ImageNet's validation set. This is 1.2 percent better than any previously published results, and the system is also 4 percent more efficient, with a 43.1 percent mean Average Precision (mAP). Additionally, a less computationally demanding version of NASNet outperformed the best similarly sized models for mobile platforms by 3.1 percent.