In the current deep learning era, convolutional neural networks are commonly used as a backbone of systems that process images or videos. A lot of existing neural network architectures are however needlessly overparameterized and their performance can be closely matched by an alternative that uses much smaller amount of parameters. Our aim is to design a method that is able to find such alternative(s) for a given convolutional architecture. We propose a general scheme for architecture reduction and evaluate three algorithms that search for the optimal smaller architecture. We do multiple experiments with ResNet and Wide ResNet architectures as the base using CIFAR-10 dataset. The best method is able to reduce the number of parameters by 75-85% without any loss in accuracy even in these already quite efficient architectures.