Elastic Neural Network For Continual Learning

Juan Ye

University of St Andrews

Deep neural networks are achieving excellent performance in many applications where a network can learn complex patterns by training on all the data at once. However, in many real applications, there often emerge new classes of data that have not been encountered before and it is crucial to allow a network to incrementally learn from new data and expand their knowledge. Such ability refers to continual learning. In this talk, we will introduce ElasticNet, a new generation of neural network for continual learning, which can automatically and strategically grow to accommodate new classes and compress to remain a compact size in order to reduce computation overhead.