

[Improving Deep Neural Networks: Hyperparameter Tuning, Regularization and Optimization](#)

Module 1: Practical Aspects of Deep Learning

- Discover and experiment with a variety of different initialization methods, apply L2 regularization and dropout to avoid model overfitting, then apply gradient checking to identify errors in a fraud detection model.

Module 2: Optimization Algorithms

- Develop your deep learning toolbox by adding more advanced optimizations, random mini batching, and learning rate decay scheduling to speed up your models.

Module 3: Hyperparameter Tuning, Batch Normalization, and Programming Frameworks

- Explore Tensor Flow, a deep learning framework that allows you to build neural networks quickly and easily, then train a neural network on a Tensor Flow dataset.