The gradient of neural network parameters could be computed by stacking up the gradients of the layers. The GNN is a generalization of NN to the graph domain. The GCN is a GNN that uses a linear approximation to spectral graph convolution followed by a non-linear activation function. The natural gradient is the steepest descent direction in the statistical manifold of distributions. The algorithm is fast, scalable, and easy to implement. It is also easy to extend to other problems. The Hessian is the matrix of second derivatives of the cost function. The algorithm is a semi-supervised version of the Fisher algorithm. The results are in the paper. The Adam-KFAC algorithm is a simple and efcient algorithm for training deep neural networks. It is also a good choice for training networks with large batch sizes. We proposed a novel optimization framework for graph-based semi-supervised learning. We I made a neural network that learns to generate fake data.