

1. 神經網路的結構(基礎知識，常見種類、優缺點)
  - o Layers
  - o Loss
  - o Activations
  - o Architectures(LSTM, CNN, Resnet, MobileNet, etc.)
  - o Transfer learning
  - o Attention
  - o Regularization
  - o Autoencoder
2. Optimization
  - o Backpropagation
  - o Gradient descent
  - o 常見用於深度學習的 optimizer
3. 資料處理
  - o normalization
  - o data augmentation
  - o imbalance data problem
4. 實作工具
  - o Programming Language Basics (Python)
  - onumpy, scipy
  - o Deep learning framework(TensorFlow or PyTorch)
5. 機器學習理論

請參考：<https://stanford.edu/~shervine/teaching/cs-229/cheatsheet-supervised-learning> 與  
<https://github.com/maxim5/cs229-2018-autumn/tree/main/problem-sets>
6. 機器學習任務之種類與其技巧

請參考：<https://stanford.edu/~shervine/teaching/cs-229/cheatsheet-supervised-learning> 與  
<https://github.com/maxim5/cs229-2018-autumn/tree/main/problem-sets>
7. 程式技巧

請參考：[http://cs231n.stanford.edu/slides/2021/lecture\\_6.pdf](http://cs231n.stanford.edu/slides/2021/lecture_6.pdf)
8. Optimization basics. For examples, convex and non-convex optimizations. Local minima, global minima, gradient descent algorithms, etc