Wide ResNet and ResNeXt

Paper 1: Wide ResNet: Wide Residual Networks

Paper 2: ResNeXt: Aggregated Residual Transformations for Deep Neural Networks.

1. Explain how the architecture of a Wide ResNet is different from original ResNet architecture?

2. Explain how identity connection in ResNets might be a potential problem for train ing a network?

3. List all the problems in the original ResNet that a wide ResNet tries to solve?

4. Explain,"The main power of deep residual networks is in residual blocks, and that t he effect of depth is supplementary".

5. State the three simple ways to increase the representational power of residual blocks.
6. B(M) denotes residual block structure, where M is a list with the kernel sizes of the convolutional layers in a block. What does B(3, 1, 1) denote? Explain how it is like network-in-network architecture.
7. State the relations of a number of parameters of a model with deepening factor (l), the number of ResNet block (d)

8. Describe in detail the architectural difference between paper 1 and paper 2?

9. Explain the operation of a simple neuron in artificial neural networks with non-linear activation as a combination of splitting, transforming, and aggregating techniques as described in paper 2.

10. Describe briefly. (a) Basic block (paper 1), (b) Bottleneck block, (c) deepening facto r and Widening factor, (d) Cross-validation, (e) cardinality