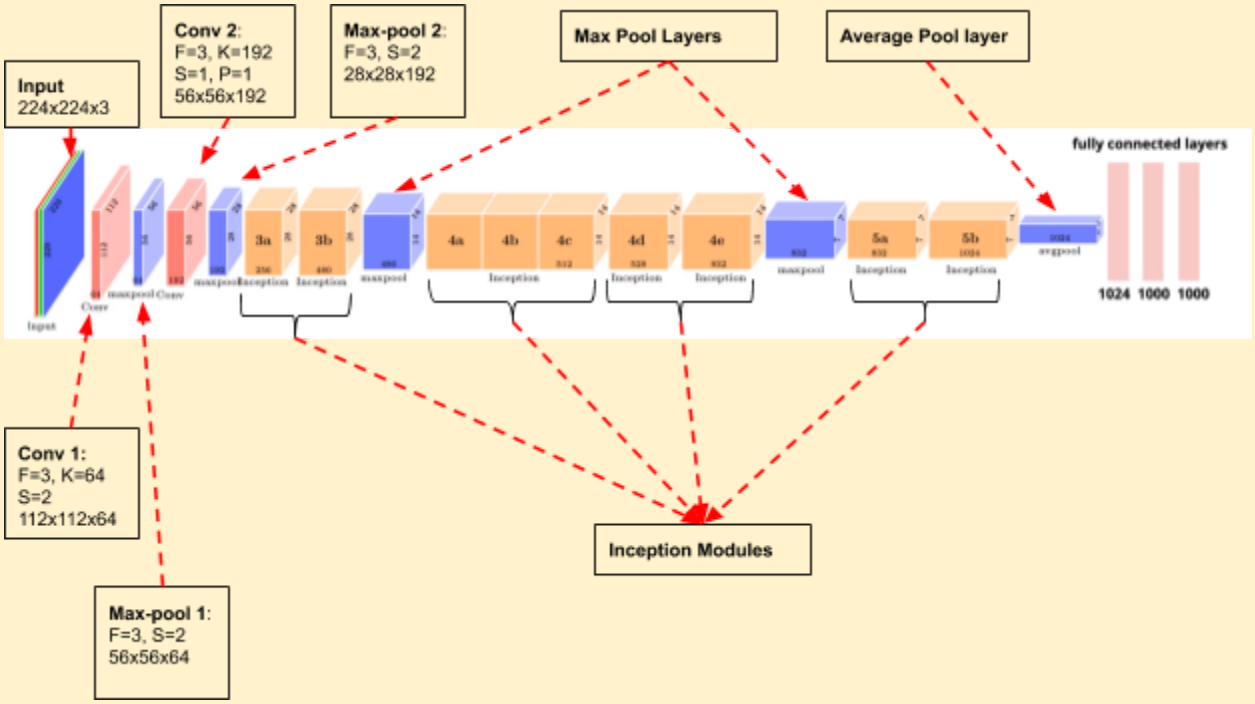
PadhAI: CNN Architectures

One Fourth Labs

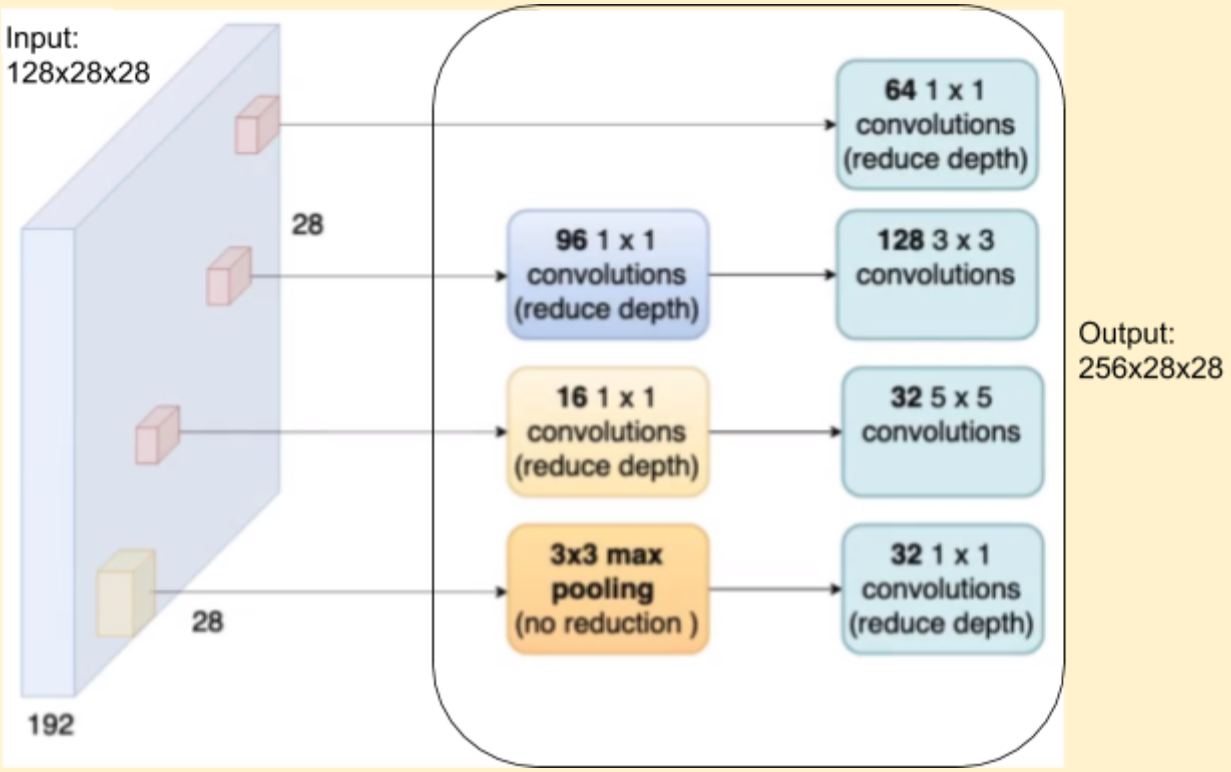
The GoogLeNet Architecture

What does the full network look like?

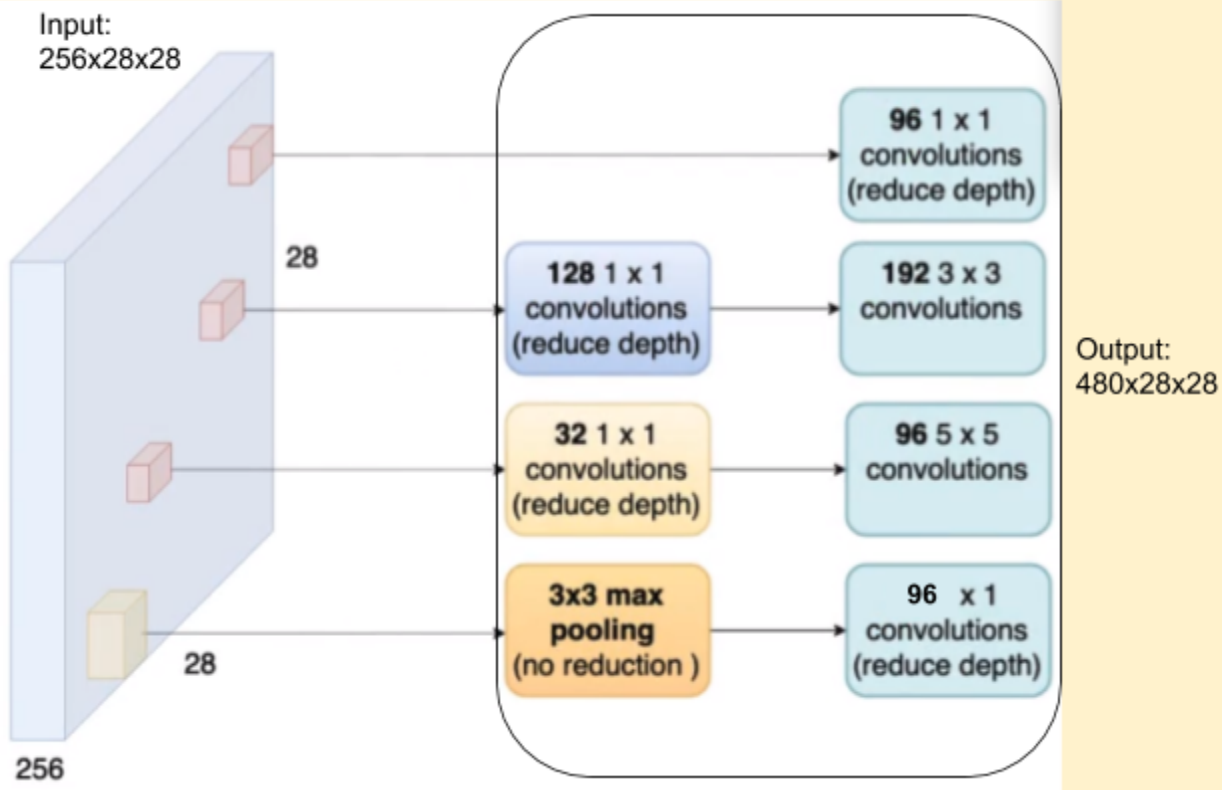
1. Let's take a look at the entire GoogLeNet architecture



2. Up till the second max-pooling layer, the architecture is similar to what we've seen in earlier configurations. Post that, we begin moving into the Inception modules.
3. **Inception Module 1:**



4. **Inception Module 2**:



5. Then there is a **Max-pooling layer which reduces the Dimensions by Half (480x14x14)**. This Max-pooling layer is used because the Max-pooling layers in the Inception modules do not reduce the dimensions.
6. **Inception Module 3,4 & 5**:
   a. **Input at Inception Module 3** is: 480x14x14
   b. **Output at Inception Module 5** is: 512x14x14
7. **Inception Module 6**:
   a. **Input**: 512x14x14
   b. **Output**: 528x14x14
8. **Inception Module 7**:
   a. **Input**: 528x14x14
   b. **Output**: 832x14x14
9. Then there is a **Max-pooling layer which reduces the Dimensions by Half (832x7x7)**.
10. **Inception Module 8**:
    a. **Input**: 832x7x7
    b. **Output**: 832x7x7
11. **Inception Module 9**:
    a. **Input**: 832x7x7
    b. **Output**: 1024x7x7
12. **Average Pool layer is used to reduce the output from Inception Module 9**, thereby reducing the number of parameters between the non-FC and FC layer interface.
13. Each Inception Module counts as 2 layers, therefore we have more than 20 layers in GoogLeNet.