* **Computer Vision/CNN**

1. How does convolution work? How does it change if the inputs are greyscale vs. RGB?

2. Explain CNN Models - Inception, ResNet.

3. Explain why the inputs in computer vision programs can get so large. What are some methods for overcoming this?

4. Why would you greyscale images in computer vision? Explain what a digital image is?

5. Explain Filters in Computer Vision with their usage.

6. Explain HAAR, HOG, SIFT, SURF features descriptor.

7. Explain LLM and Vision Transformers.

8. Explain Object detection (yolo, etc.) and Image Segmentation (Mask R-CNN, etc.)

* **Python CV**

1. Given an array filled with random values, write a function rotate\_matrix to rotate the array by 90 degrees in the clockwise direction.

2. Given a JSON object with nested objects, write a function flatten\_json that flattens all the objects to a single key-value dictionary without using library.

* **Leetcode**

1. <https://leetcode.com/problems/reverse-linked-list/>

2. <https://leetcode.com/problems/linked-list-cycle-ii/>

3. <https://leetcode.com/problems/symmetric-tree/>

4. <https://leetcode.com/problems/find-median-from-data-stream/>

5. <https://leetcode.com/problems/burst-balloons/>

* **Projects + AI/ML Basics + DSA + System Design + Behavioural**