

Let us not have class tomorrow, will take a class on weekend.

⇒ Experience

⇒ Resume + Projects + Diff. rounds + Diff interviews

DSIP + Social Profile + Final HR round \* Always get on email.  
+ Referral + Cover letter + Assignment

⇒ Technical Concepts ⇒ Python, DS, ML, DL, CV, NLP

Computer Vision + NLP (Natural Lang. Processing)

+++ Resources

# Computer Vision

## 1] Introduction

Overview & application

## 2] Image Processing

- ⇒ Image representation (grayscale, color images)
- ⇒ Image transformation (scaling, rotation, translation)
- ⇒ Filtering & Image enhancement
- ⇒ Edge detection (Sobel, Canny)

## 3. Feature Extraction and Description

Keypoint Detection (SURF, SIFT)

Descriptors (ORB, BRIEF)

Feature matching techniques (FLANN)

## 4. Object Detection & Recognition

⇒ Sliding window approach

⇒ DL-based Object Detection (YOLO, SSD, R-CNN)



## 5. Image Segmentation

Thresholding

Clustering (K-means, mean shift)

Region based

Semantic and Instance Segmentation

## 6. Deep Learning for Computer Vision

⇒ CNN

⇒ Transfer Learning

⇒ Data augmentation technique

⇒ Architecture: LeNet, Inception

## 7. Advance Topic

⇒ GAN (Generative Adversarial Network)

⇒ Image Captioning

⇒ 3-D vision & depth estimation

⇒ VQA

## 8. Application

⇒ Facial recognition

⇒ Autonomous vehicle

⇒ Medical Imaging

⇒ Industrial automation



# Natural Language Processing (NLP)

## 1. Intro

⇒ Def<sup>n</sup> and application

⇒ Challenge in NLP (ambiguity, context etc.)

## 2. Text Processing

⇒ Tokenization

⇒ Stop word Removal

⇒ Text normalization

⇒ Stemming & Lemmatization

## 3. Language Models

⇒ TF-IDF

⇒ n-gram

⇒ Bow

⇒ Word Embedding

## 4. Syntactic Analysis

⇒ POS tagging

⇒ Dependency / Constituency parsing

## 5. Semantic Analysis

⇒ Named Entity Recognition (NER)

⇒ Sentiment analysis

⇒ Semantic role labeling

⇒ Word sense disambiguation

## Sequence Modeling

RNN

LSTM

GRU

Attention mechanism & transformers

## Machine Translation

Statistical machine translation

Neural machine translation (seq2seq models, Transformers)

## Speech Recognition & Synthesis

Speech synthesis (TTS, Text-to-speech)

Automatic speech recognition (ASR)

## Applications

- ⇒ Sentiment analysis
- ⇒ Document summarization
- ⇒ Information retrieval & search engines
- ⇒ Chatbot



# HR Post Interview Discussion

HR  $\Rightarrow$  if the budget aligns

HR  $\rightarrow$  TR1  $\rightarrow$  TR2  $\rightarrow$  TR3  $\rightarrow$  HR  
Sum

10  $\rightarrow$  12

Never showcase rude behaviour or  
eagerness

Connect with current employees & get  
an idea

Classdoor

$\Rightarrow$  Review Cycle  $\leftarrow$  Part of that

$\Rightarrow$  Salary Breakup

10  $\rightarrow$  12  
 $\downarrow$   
13  $\rightarrow$  14      15



Base salary

{ Joining / Retention Bonus  
Relocation  
Stipends }  $\Rightarrow$  negotiate

Multiple offers  $\Rightarrow$  politely