GUIDELINES FOR RECITATION

Applications of Computer Vision and Deep Learning

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Spring Semester

Instructor - Jimut Bahan Pal.

Research Scholar @ IIT Bombay

These are some of the general notes & recommendation for creating the materials for Recitation. Note, you will have to take up a topic, research about it in depth, and prepare a good presentation on that topic. Working demos will be awarded extra credit. Please take this seriously since it has 20% of your weightage.

(In general a team size of 1-2 is preferred, single team members doing exceptional work will get extra credit).

These are the tentative topics for recitation:-

(P.S.: You may choose your own topic as well, but please get it approved from me before-hand)

- Neural ODEs (Vision)
- Score based Generative Models with diff Equations
- Autoregressive Networks
- Glow
- Normalizing flow
- Diffusion Models
  - DDPM (Denoising Diffusion Probabilistic Models)
    - Conditional diffusion models
    - Latent & Stable Diffusion models.
- Federated learning
- Domain Adaptation
- Contrastive learning (SimCLR)

- MoCo – Momentum Contrast for unsupervised Visual Representation Learning.

Please make sure that the topics you choose have relevance in research and well aligned with computer vision & Deep Learning. Exceptional challenging topics which are not related to Computer Vision but are related to Deep Learning are also welcome. But the presentation will be 20–25 minutes, and 5 minutes of Q&A.

(Students who creates exceptional presentation & Demo will be given extra credits and would be highlighted in the course website)

Latex formatting beamer type presentation is preferred provided you are well accustomed with Latex. Else normal Google slides will also be fine

Important & General Recommendations:-

- Please make slides as crisp as possible, with point to point text and same formatting throughout.
- Don't use too many vibrant design, this is a research presentation, not a buisness meetup. (Corporate presentations might have different requirements).
- Don't waste space while creating slides, utilize as much space as possible
- Please take motivation from good researchers (Ian Goodfellow

Kaiming He, Natasha Jacques etc, for how to make a good presentation).

- Things will take time, and let's make this a good learning experience.

Given this course will go through full semester, we may have the recitations around February mid (regarding the progress of work made) and May mid (regarding the final work to be presented).

→ We may give around 5-10 mins per individual, encourage group discussions, suggest improvements

and have a continuous evaluation. Please note that this evaluation will carry 40% of the 20%, i.e, 8% of the total course-weightage.