

# Homework 1

- We will provide some research topics and corresponding paper lists, each student need to choose one paper and submit a reading report **no more than 3 pages**.
- You can choose a paper in the lists provided, or any other topic that you are interested in (need to submit the detailed information of the paper you choose, *e.g.*, BibTex format).
- You should briefly explain the **problem** the paper is working on, their major **contributions** and the proposed **solutions**.
- Your **own understanding of the contributions** and the **unsolved problems of the paper** are welcomed in the report.

# Topic 1: Question Answering

1. Compact Trilinear Interaction for Visual Question Answering
2. Scene Text Visual Question Answering
3. Multi-Modality Latent Interaction Network for Visual Question Answering
4. SegEQA: Video Segmentation Based Visual Attention for Embodied Question Answering
5. Relation-Aware Graph Attention Network for Visual Question Answering
6. MUREL: Multimodal Relational Reasoning for Visual Question Answering
7. Heterogeneous Memory Enhanced Multimodal Attention Model for Video Question Answering
8. OK-VQA: A Visual Question Answering Benchmark Requiring External Knowledge
9. Deep Modular Co-Attention Networks for Visual Question Answering
10. Multi-Target Embodied Question Answering
11. Visual Question Answering as Reading Comprehension
12. Dynamic Fusion With Intra- and Inter-Modality Attention Flow for Visual Question Answering
13. Cycle-Consistency for Robust Visual Question Answering
14. GQA: A New Dataset for Real-World Visual Reasoning and Compositional Question Answering
15. Transfer Learning via Unsupervised Task Discovery for Visual Question Answering
16. Social-IQ: A Question Answering Benchmark for Artificial Social Intelligence
17. Explicit Bias Discovery in Visual Question Answering Models
18. Answer Them All! Toward Universal Visual Question Answering Models
19. ...

## Topic 2: Tracking

1. Unsupervised Deep Tracking
2. Tracking by Animation: Unsupervised Learning of Multi-Object Attentive Trackers
3. Fast Online Object Tracking and Segmentation: A Unifying Approach
4. Object Tracking by Reconstruction With View-Specific Discriminative Correlation Filters
5. Leveraging Shape Completion for 3D Siamese Tracking
6. Target-Aware Deep Tracking
7. SPM-Tracker: Series-Parallel Matching for Real-Time Visual Object Tracking
8. SiamRPN++: Evolution of Siamese Visual Tracking With Very Deep Networks
9. Deeper and Wider Siamese Networks for Real-Time Visual Tracking
10. Deformable Surface Tracking by Graph Matching
11. Deep Meta Learning for Real-Time Target-Aware Visual Tracking
12. Tracking Without Bells and Whistles
13. Robust Multi-Modality Multi-Object Tracking
14. 'Skimming-Perusal' Tracking: A Framework for Real-Time and Robust Long-Term Tracking
15. Learning Aberrance Repressed Correlation Filters for Real-Time UAV Tracking
16. Spatial-Temporal Relation Networks for Multi-Object Tracking
17. Bridging the Gap Between Detection and Tracking: A Unified Approach
18. Physical Adversarial Textures That Fool Visual Object Tracking
19. ...

# Topic 3: Person Re-Identification

1. Perceive Where to Focus: Learning Visibility-Aware Part-Level Features for Partial Person Re-Identification
2. Invariance Matters: Exemplar Memory for Domain Adaptive Person Re-Identification
3. Dissecting Person Re-Identification From the Viewpoint of Viewpoint
4. Learning to Reduce Dual-Level Discrepancy for Infrared-Visible Person Re-Identification
5. Densely Semantically Aligned Person Re-Identification
6. Generalizable Person Re-Identification by Domain-Invariant Mapping Network
7. Re-Ranking via Metric Fusion for Object Retrieval and Person Re-Identification
8. Weakly Supervised Person Re-Identification
9. Distilled Person Re-Identification: Towards a More Scalable System
10. Instance-Guided Context Rendering for Cross-Domain Person Re-Identification
11. Mixed High-Order Attention Network for Person Re-Identification
12. Pose-Guided Feature Alignment for Occluded Person Re-Identification
13. Robust Person Re-Identification by Modelling Feature Uncertainty
14. Co-Segmentation Inspired Attention Networks for Video-Based Person Re-Identification
15. RGB-Infrared Cross-Modality Person Re-Identification via Joint Pixel and Feature Alignment
16. Beyond Human Parts: Dual Part-Aligned Representations for Person Re-Identification
17. Batch DropBlock Network for Person Re-Identification and Beyond
18. Omni-Scale Feature Learning for Person Re-Identification
19. ...

# Any other topic which is relevant to deep learning ...

**Need to provide the detailed information of the paper you choose, *e.g.*, BibTex format:**

```
@InProceedings{
  author = {Huang, Yan and Wu, Qi and Song, Chunfeng and Wang, Liang},
  title = {Learning Semantic Concepts and Order for Image and Sentence Matching},
  booktitle = {The IEEE Conference on Computer Vision and Pattern Recognition (CVPR)},
  year = {2018}
}
```