

COMP9444 Projects Ideas

Computer Vision

1. Counting people to enforce social distancing rules
2. Pedestrian detection for autonomous vehicles
3. Facial Expression Recognition
4. PPE compliance for construction and healthcare
5. Face mask detection
6. Pathology classification
7. Hand gesture recognition
8. Face recognition
9. Traffic sign recognition
10. Neural style transfer
11. Multi-class image classification
12. Content based image retrieval
13. Image segmentation

NLP

1. Sentiment analysis from text
2. Automated chatbot for Sydney trains
3. Topic identification
4. Spam classification
5. Sentence autocomplete using language models
6. Automated question tagging system for Quora, Stack overflow, or reddit
7. Text toxicity detection (toxic, non-toxic)
8. Automated language identification
9. Text similarity search
10. Paraphrase detection
11. Text summarisation
12. Fake news detection
13. Developing a chatbot for FAQs
14. Analysing tweets about climate changes, Coal mines, etc.
15. Speaker verification
16. Speech emotion recognition
17. Music genre classification

Joint CV and NLP

1. Image Captioning
2. Visual Question Answering

Unsupervised Learning

1. Image Reconstruction using Autoencoders
2. Image Denoising using Autoencoders

Reinforcement Learning

1. Building Cart Pole game using RL
2. Self-improvement in robotic learning using RL
3. Playing Mario using RL
4. Deep Q-learning for Flappy Bird
5. Allocation of resources in constrained environments, can be applications in Education, Policy makers, Government, etc.

Adversarial Learning

1. Generating synthetic data using GANs for data augmentation in DL
2. Image style transfer using GANs
3. Denoising Images using GANs
4. Generating Adversarial Examples using GANs