

| Project Allocated | Paper Link | Code Link | Resource Links | TAs |
|---|---|---|--|-------------------|
| Gaussian Mixture Variational Autoencoder with Contrastive Learning for Multi-Label Classification | https://proceedings.mlr.press/v162/bai22c/bai22c.pdf | https://github.com/JunwenBai/c-gmvae | https://www.youtube.com/watch?v=DWVIEw0D3gA https://www.youtube.com/watch?v=uaaqVVS9-rM https://www.youtube.com/watch?v=LzEywGCT7-A https://www.jeremyjordan.me/variational-autoencoders/ https://lilianweng.github.io/posts/2018-08-12-vaes/ https://people.kth.se/~poklukar/documents/VAEs_presentation.pdf https://lilianweng.github.io/posts/2021-05-31-contrastive/ https://www.v7labs.com/blog/contrastive-learning-guide | Tarun & Rahul |
| Prompting Decision Transformer for Few-Shot Policy Generalization | https://arxiv.org/pdf/2206.13499.pdf | https://github.com/mxu34/prompt-dt | http://jalammargithub.io/illustrated-transformer/ https://medium.com/swlh/getting-started-with-reinforcement-learning-mujoco-and-openai-gym-67243b78b599 https://www.endtoend.ai/envs/gym/mujoco/ https://gymnasium.farama.org/tutorials/training_agents/reinforce_invpnd_gym_v26/ https://huggingface.co/learn/deep-rl-course/unitbonus3/offline-online https://huggingface.co/blog/decision-transformers | Tarun & Viplove |
| Graph-Relational Domain Adaptation | https://openreview.net/pdf?id=kcwyXtt7yDj | https://github.com/Wang-ML-Lab/GRDA | https://towardsdatascience.com/graph-theory-and-deep-learning-know-hows-6556b0e9891b https://medium.com/neo4j/graph-data-modeling-categorical-variables-dd8a2845d5e0 | Tarun & Rahul |
| LEARNING STRIDES IN CONVOLUTIONAL NEURAL NETWORKS | https://openreview.net/forum?id=M752z9FKJP | https://github.com/google-research/diffstride | https://medium.com/@RaghavPrabhu/understanding-of-convolutional-neural-network-cnn-deep-learning-99760835f148 https://machinelearningmastery.com/padding-and-stride-for-convolutional-neural-networks/ https://cs.nju.edu.cn/wuj/paper/CNN.pdf | Rahul & Kiran |
| Improving Visual Prompt Tuning for Self-supervised Vision Transformers | https://proceedings.mlr.press/v202/yoo23a/yoo23a.pdf | https://github.com/ryongithub/GatedPromptTuning | http://jalammargithub.io/illustrated-transformer/ https://www.v7labs.com/blog/self-supervised-learning-guide https://lilianweng.github.io/posts/2019-11-10-self-supervised/ https://colab.research.google.com/github/huggingface/notebooks/blob/main/examples/image_classification.ipynb https://huggingface.co/blog/fine-tune-vit https://www.philschmid.de/image-classification-huggingface-transformers-keras https://machinelearningmastery.com/the-vision-transformer-model/ https://theaisummer.com/vision-transformer/ | Bheeshm & Viplove |
| Nested Graph Neural Networks | https://papers.nips.cc/paper/2021/file/8462a7c229aea03dde69da754c3bbcc4-Paper.pdf | https://github.com/muhanzhang/NestedGNN | https://distill.pub/2021/gnn-intro/ https://distill.pub/2021/understanding-gnns/ https://www.youtube.com/playlist?list=PLoROMvody4rPLKxlpqhjhPgdQy7imNkDn https://www.youtube.com/playlist?list=PLSgGvve8UweGx4_6hrF3n4wpHf_RV76_ | Tarun & Rahul |
| ON INCORPORATING INDUCTIVE BIASES INTO VAES | https://openreview.net/pdf?id=nzvbBD_3J-g | https://github.com/NingMiao/Intel-VAE | https://towardsdatascience.com/understanding-variational-autoencoders-vaes-f70510919f73 https://towardsdatascience.com/intuitively-understanding-variational-autoencoders-1bfe67eb5daf https://www.jeremyjordan.me/variational-autoencoders/ https://lilianweng.github.io/posts/2018-08-12-vaes/ https://people.kth.se/~poklukar/documents/VAEs_presentation.pdf https://saturncloud.io/blog/what-is-inductive-bias-in-machine-learning/ https://www.baeldung.com/cs/ml-inductive-bias | Bheeshm & Kiran |
| Rethinking Graph Neural Networks for Anomaly Detection | https://arxiv.org/pdf/2205.15508.pdf | https://github.com/squareRoot3/Rethinking-Anomaly-Detection | https://distill.pub/2021/gnn-intro/ https://distill.pub/2021/understanding-gnns/ https://www.youtube.com/playlist?list=PLoROMvody4rPLKxlpqhjhPgdQy7imNkDn https://www.youtube.com/playlist?list=PLSgGvve8UweGx4_6hrF3n4wpHf_RV76_ | Bheeshm & Ankit |
| POUF: Prompt-Oriented Unsupervised Fine-tuning for Large Pre-trained Models | https://proceedings.mlr.press/v202/tanwisuth23a/tanwisuth23a.pdf | https://github.com/korawat-tanwisuth/POUF | http://jalammargithub.io/illustrated-transformer/ https://www.youtube.com/watch?v=kCc8FmEb1nY&pp https://developer.nvidia.com/blog/an-introduction-to-large-language-models-prompt-engineering-and-p-tuning | Kiran & Ankit |