

## REPORT ON PAPER READING WORKSHOP

Machine learning is a field that evolves very rapidly, and technology advances at least every few months. As a result, reading a few textbooks and knowing the principles are required, it is not sufficient, and it is crucial to stay updated with the literature. So, reading academic papers is a necessary skill, just as in many other fields of computer science.

Reading academic papers is a means to transfer our knowledge to the scientific community for verifying and validating the experiment and the idea. It is understood that a careful selection of authentic papers is essential as there are many unverified papers on the internet. These papers can be identified by considering the source, and its contents. A good scientific paper will always be supported by reproducible experiments, genuine test results, and scientific principles which may contain some complex mathematics. Since the scientific papers quote the references properly it is easy to track the source of a particular concept. So, referencing, overall helps the reader to dive into the in-depth concepts. Each paper may follow a different style of presentation depending on the author's preferences, and some may explain the concepts through interesting facts or some analogy so that the reader can understand the idea easily. It is better if the idea converges as we go deeper into the paper. In other words, including different ideas under one paper is not recommended. In addition, if the paper claims some observations, backing it with necessary codes used for generating the output as well as suitable results is always a good practice. Also, it is essential that the paper focuses on relevant topics, rather than discussing unrelated areas excessively. In conclusion, a scientific paper should be able to convey the idea efficiently, simply if possible, and should be verified with proper results and observations.

For example, The paper titled Unpaired Image-to-Image translation using Cycle-Consistent Adversarial Network and Dropout: A Simple Way to Prevent Neural Networks from Overfitting are two original papers which followed all the above-mentioned qualities. The former discusses a novel method for capturing special features of one image class and figuring out how these characteristics can be translated into the other image class, all in the absence of any paired training image collections. In simple terms, this method can transform one image from a class using the set of images collected from each class where no explicit connection between the images from two datasets is required. For instance, translating zebra to horse or vice versa. The model consists of two Generative Adversarial Networks which are fitted by minimizing cycle-consistency losses, adversarial losses, and identity losses. The latter paper explains how dropouts can decrease overfitting and thereby achieve better generalization capabilities. It combines many different neural network architectures by removing randomly chosen units from neural networks. The concepts also prevent co-adaptation by forcing all the units to perform well independently. The paper clearly states and verifies this technique with different data sets.

In conclusion, reading a scientific paper is essential to keep up with new knowledge and changes happening in the world, especially in the computer science area. The skills and knowledge achieved from the paper reading can be used for identifying relevant and genuine papers.