**Semi-Supervised Learning with Ladder Networks**

1. **Introduction**
   * Supervised Learning
   * Unsupervised Learning
   * Semi-supervised Learning
   * Semi-supervised using ladder network
2. **Overview**

* How algorithm works?
* Explain encoder-decoder
* Final cost

1. **Algorithm**
   * Start with the basic concepts
   * Encoder-decoder function in detail
   * Denoising Source Separation(DSS) and Denoising Auto-Encoder(DAE)
   * Ladder network architecture
2. **Implementation and Results**
   * Python implementation
   * Code snippets
   * Dataset used (MNIST)
   * Training Labeled data + Training Unlabeled data
   * Results – Testbeds used
   * Results – Accuracy measured
   * Results – Time taken for each testbed
3. **Conclusion**
4. **References**