**SET CONFERENCE**

From Real to Artistic : SEMANTIC CONSTRAINTS IN STYLE TRANSFER

* **SRIJAN DUTTA 23MCA0131**
* **SHAON GHOSH 23MCA0133**

**ABSTRACT**

Recently Style transfer techniques have gained significant hype in the field of image processing,  where we can convert an image into a specific art style as if it was done by some artist of the medieval period, while preserving the original image. However, maintaining the contents of the original image precisely is of concern. Our research paper explores the incorporation of semantic constraints in the context of style transfer algorithms. With the emergence of neural network-based style transfer methods, it has become essential to align these techniques with semantic understanding. Our paper aims to integrate these semantic constraints while  preserving the meaning and context of the objects and structures present in the original image, after applying a specific artistic style.

**Our main goals would be:**

* Examining already available style transfer algorithms and their way of integrating semantic constraints like object detection, attention mechanisms and feature activation maps and knowing their advantages and limitations.
* Using image processing applications to assess how each semantic constraints affect the quality and style of the processed image.
* Look for any unresolved challenges in this field and try providing a solution.

**Keywords**: Style transfer, Semantic constraints, Neural networks, Image processing, Content preservation, Convolutional Neural Networks, Artistic styles.

**WEEKLY SCHEDULE**

|  |  |
| --- | --- |
| **WEEK** | **GOALS** |
| Week 1 | All about preserving images and why |
| Week 2 | Semantic Constraints & how to integrate |
| Week 3, 4 | Style transfer & examining already available algorithms |
| Week 5, 6 | Impact of semantic constraints on the quality of style transfer results |
| End of week 6 | Informal Review with mentor |
| Week 7 | Comparative analysis of the algorithms |
| Week 8 | Review & Final Draft |