

CSE541 - Computer Vision

Weekly Report 6

**Improvising Object Tracking Algorithm SORT for Long-Term Trajectory Extraction**

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**Overview:**

This week, our focus transitioned towards augmenting our object tracking algorithm by integrating YOLOv8 for object detection, building upon our previous work with YOLOv5.

**Objective:**

Our objective for this week was to implement YOLOv8 for object detection within our tracking algorithm and assess its performance compared to YOLOv5.

**Focus Area:**

We concentrated on understanding the architecture and improvements of YOLOv8 compared to YOLOv5, particularly in terms of accuracy, speed, and versatility in object detection tasks.

**Study Approach:**

We thoroughly studied the YOLOv8 paper and its implementation details, adapting our existing codebase to incorporate the changes required for utilizing YOLOv8. We then conducted experiments to evaluate the performance of YOLOv8 in our tracking algorithm.

**Future Steps:**

In the upcoming weeks, we plan to analyze the results of integrating YOLOv8 and compare them with our previous experiments with YOLOv5. Additionally, we aim to fine-tune the parameters of our tracking algorithm to optimize its compatibility with YOLOv8 and further enhance the accuracy and efficiency of object tracking.

### **References:**

1. Jocher, G., Chaurasia, A., & Qiu, J. (2023). Ultralytics YOLO (Version 8.0.0) [Computer software]. https://github.com/ultralytics/ultralytics