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**CSE 532 MACHINE LEARNING**

**Weekly Report – 5**

**UAV’s Ground Sample Distance (GSD) Calculation   
Using AU Drone Dataset**

**~ Submitted To Prof. Mehul Raval**

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* **Weekly Progress:**

The methodology used for the work done this week was:

1. **Dataset Processing:** The dataset was loaded using the Pandas library, and redundant features were removed to streamline the data.
2. **Feature Scaling:** The features were scaled using StandardScalar to ensure uniformity and perform further analysis.
3. **Dimensionality Reduction:** Principal Component Analysis was performed for the variation caused by each feature, and after that, the eight most relevant features were considered. This process helps reduce dimensionality and understand the data's variance in a compact representation.
4. **Ground Sampling Distance:** This extracted data is the input for calculating the Ground Sample Distance (GSD) using linear regression analysis and object size relationship.