

Increase efficiency in shipment tracking system that utilizes mobile connectivity of Global positioning system(GPS) comparison with optical character recognition (OCR).

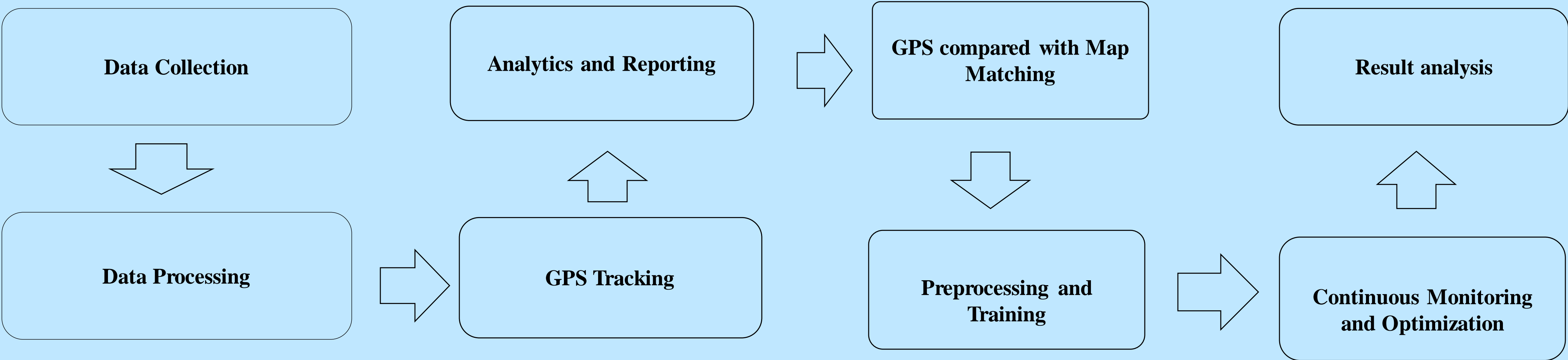
INTRODUCTION

- Increase efficiency in shipment tracking system that utilizes mobile connectivity of Global positioning system(GPS) comparison with optical character recognition (OCR).
- Improve the accuracy of tracking information by leveraging GPS for location data and OCR for interpreting textual information such as shipping labels or documents.
- By tracking raw materials and finished products within the manufacturing process using GPS Algorithm the system provides real-time visibility into inventory levels, location movements, and production status.
- Implementing robust data security measures for GPS and OCR data ensures the confidentiality and integrity of sensitive information
- Integrating GPS location information allows for data fusion and correlation analysis. This integration enables the system to provide comprehensive insights into shipment statuses, delivery routes, transit times.



Shipment tracking system

MATERIALS AND METHODS



RESULTS

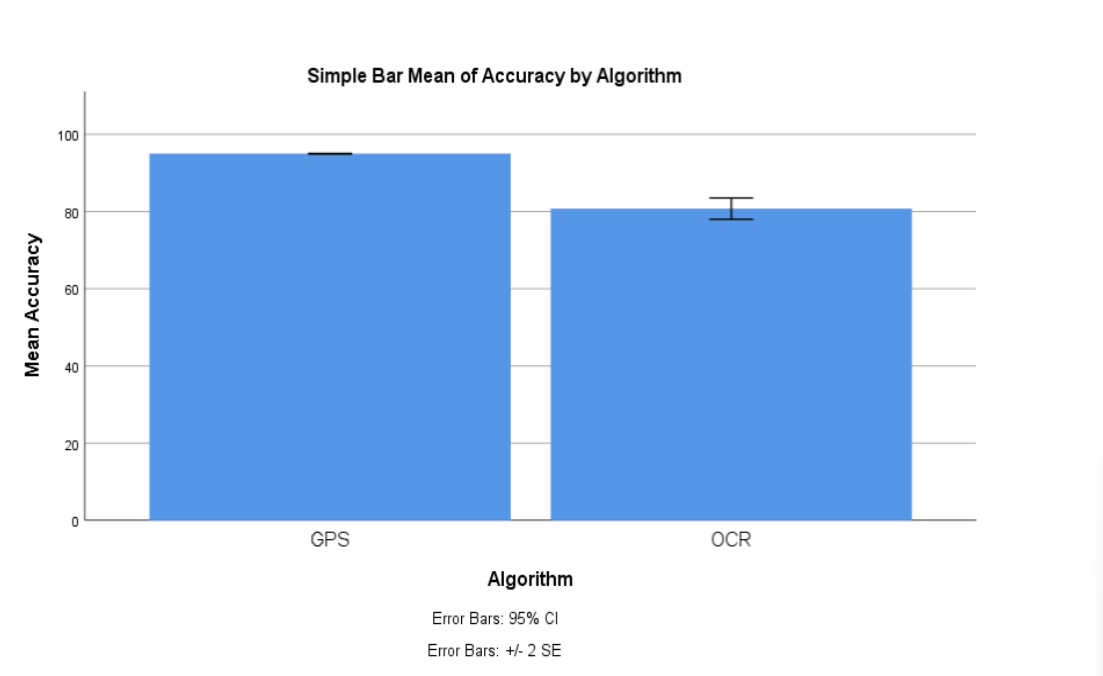


Figure 1, The bar graph illustrates distinctive variations in mean accuracy between the Global Positioning System (GPS) and OCR algorithms.

	Algorithm	N	Mean	std. Deviation	Std.Error Mean
Accuracy	GPS	20	95.00	0.000	0.000
	RFID	20	80.75	6.155	1.376

Table1:Global Positioning System (GPS) and OCR. Both algorithms were applied to 20 samples each. The mean value achieved by the GPS was 95.00, surpassing the mean of 80.75% obtained by the OCR algorithm

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig	T	Diff	sig(2-tailed)	Mean Difference	std.Error difference	95% Confidence Interval of the Difference	
								lower	upper
Equal variances assumed	57.419	0.000	10.3541	38	0.000	14.250	1.376	11.464	17.036
Equal variances not assumed	-	-	10.354	19.000	0.000	14.250	1.376	11.369	17.131

Table2:The standard deviations for the Global Positioning System (GPS) and OCR were 0.00 and 6.155 respectively. Moreover, the standard error means were 0.000 for the Global Positioning System (GPS) and 1.376 for OCR.

DISCUSSION AND CONCLUSION

- The mean accuracy achieved by the GPS algorithm is significantly higher (95.47) compared to the OCR algorithm (78.95), indicating that GPS technology provides more precise location data for tracking shipments.
- This higher mean accuracy suggests that GPS is better suited for applications where precise location information is crucial, such as logistics and supply chain management.
- The statistical analysis further confirms the superiority of the GPS algorithm over OCR, with the independent sample t-test revealing a statistically significant difference between the two algorithms at a 95% confidence interval ($p < 0.05$).
- The statistical significance of the difference between GPS and OCR algorithms highlights the practical advantage of utilizing GPS technology for shipment tracking systems.

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