

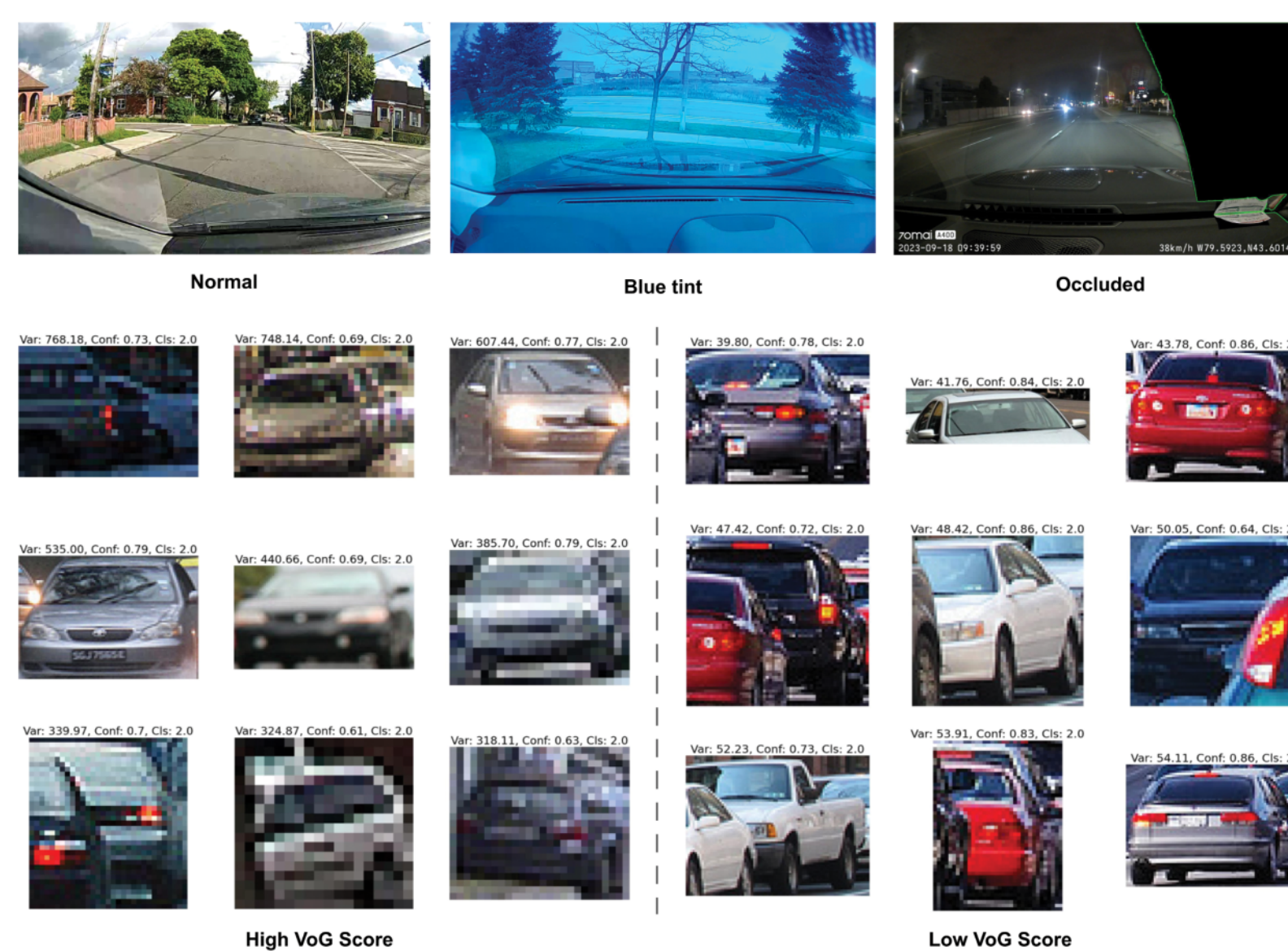
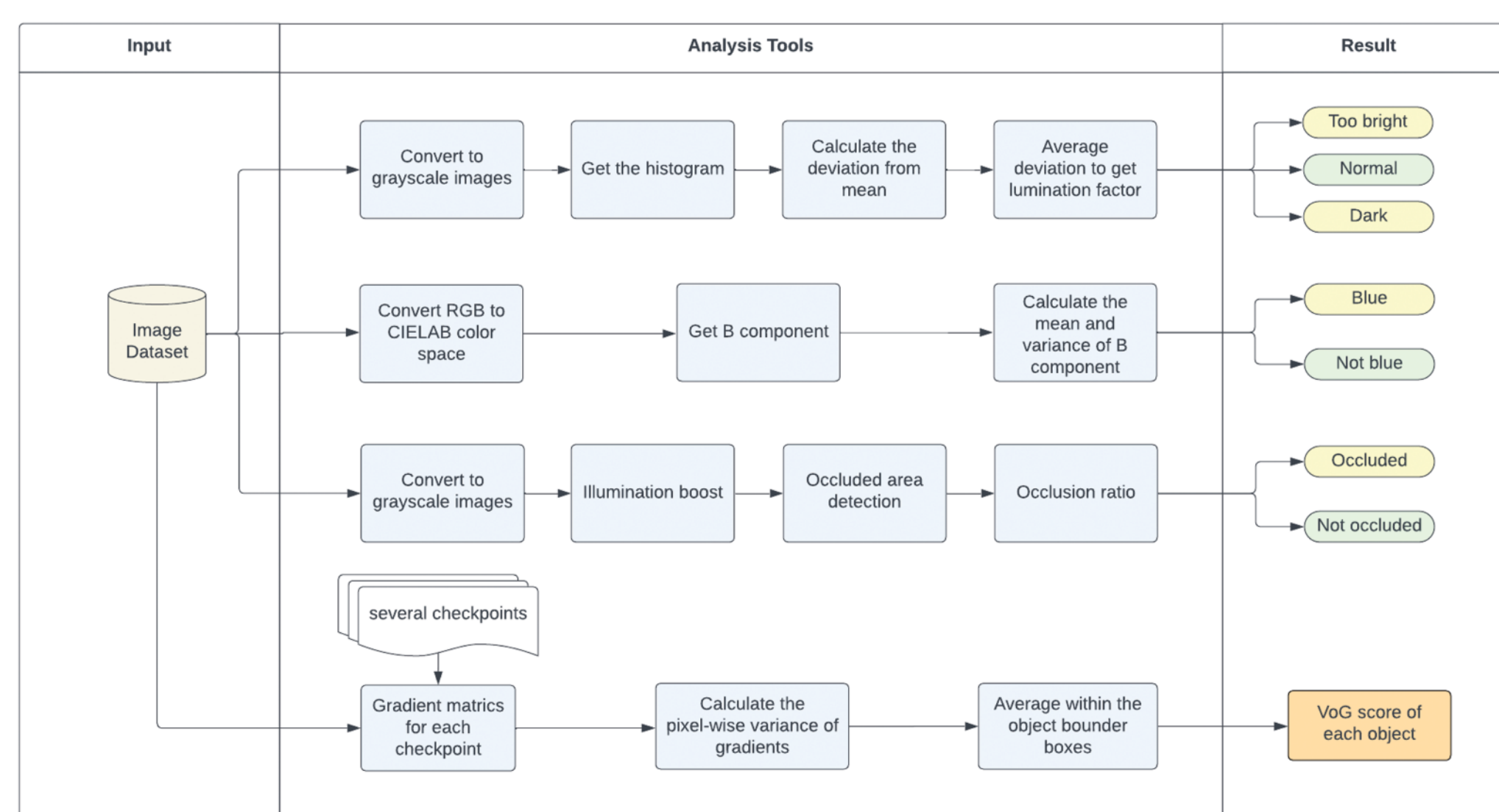
## Data Quality Detection and Improvement for AI Dashcam Models

### Algorithms and Experiments

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### PROJECT SUMMARY

GEOTAB leverages its partner's dashcams to deliver clear and complete videos of driving events. The dashcams are integrated with some ongoing dashcam AI models that serve to inform unsafe driving behaviors, monitor road signs, and locate speed limit signs. GEOTAB maintains a continuous video data collection from these dashcams, which is subsequently employed for training or retraining various models aimed at enhancing and assessing the effectiveness of dashcam AI systems. Consequently, it becomes imperative to gain a comprehensive understanding of both the data's inherent quality and its consequential impact on the model's performance. The goal of the project is to detect and improve the GEOTAB dashcam data quality and contribute to evaluating and validating the models' ability and performance. This project designed and implemented a suite of analysis tools and improvement strategies for the image and video data. These encompass detecting the image qualities and attributes such as brightness, blue tint, and occlusion. Additionally, the tools enable evaluating the model and making it more explainable by identifying what the model has learned from the datasets and the importance of different features.