

HG-Lane: High-Fidelity Generation of Lane Scenes under Adverse Weather and Lighting Conditions without Re-annotation

Supplementary Material

A. Visualization in Real-World

In Figure 6, a comparison is presented between the samples generated by our framework and real-world samples. We can see that the realism of images generated by HG-Lane is very close to that of real-world images.



Figure 6. Comparison with Real-World Samples.

B. Visualization in Suppression Module

In Figure 7, the samples produced by our framework are compared with those from the suppression module. We can see that the addition of the suppression module has some effect on removing weather features such as rain streaks, haze, and snowflakes, but it does not fundamentally alter the weather domain. As a result, the lane detection model still exhibits poor generalization performance. Moreover, the suppression module itself incurs additional computational overhead, significantly impacting real-time performance.

C. Visualization in Other Dataset

In Figure 8, we show our framework generalizes well to other mainstream lane detection datasets, such as TuSimple, OpenLane, and CurveLanes, achieving favorable results.



Figure 7. Comparison with Suppression Module.

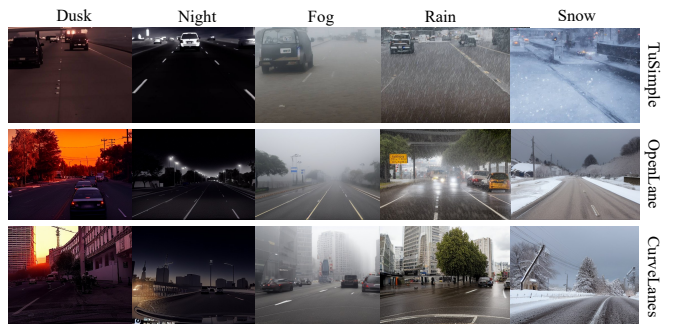


Figure 8. Examples of other datasets.