

Stereo Camera-Based Obstacle Detection System in Railway Yards

Hiroki MUKOJIMA Ryo KAGEYAMA
Nozomi NAGAMINE Syoji KOMURO

Several railway operators are currently advancing toward driverless operations. To achieve end-to-end autonomy, operational conditions must be investigated not only along mainlines but also within depots and station premises. Our prior work addressed a forward obstacle detection system for mainline. Because environments such as yards and stations feature distinct characteristics—including object types, operation speeds, sightlines, and operational rules—this paper redefines the performance requirements and detection targets. Focusing on these environments, this paper defines the performance requirements based on current technology, proposes a train-borne obstacle detection architecture tailored to depot/station operations, and reports evaluation results for representative scenarios.