

Performance model verification of autonomous-vehicle group control algorithms

1955008 Yui Sahara

Abstract

Automatic driving technology has been rapidly development in recent years. For safety and efficient cities with a lot of such autonomous-vehicle, we need to consider not only control systems for individual vehicles but also those for a group of vehicles. In this article, we investigate a way to modeling and verification of autonomous-vehicle group control algorithms using a model checking technique UPPAAL.

1 Introduction

Automatic driving technology is more and more developing. Automatic driving is divided into level 5 depending on technology installed. In Japan, general car install level 2 supporting driver. In the future, Japan government set a goal that the vehicle installed level 4 become popular. If a lot of automatic driving cars are used in a city, some problems may be occurred. Thus, we need autonomous-vehicle group control algorithms. In this paper, I verify the autonomous-vehicle group control algorithms with formal method.

2 Past research

3 a

References

- [1] Kim Guldstrand Larsen and Paul Pettersson and Wang Yi, UPPAAL in a Nutshell, International Journal of Software Tools for Technology Transfer, Vol.1, No.1-2, pp.134-152, 1997.