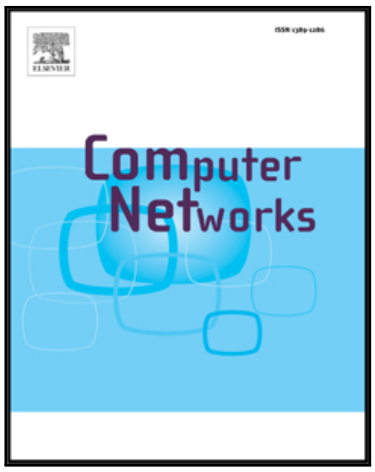

ABSCEV: An agent-based simulation framework about smart transportation for reducing waiting times in charging electric vehicles

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ABSCEV: An agent-based simulation framework about smart transportation for reducing waiting times in charging electric vehicles

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Abstract

Fuel has been the main source of energy for cars for many years, but the non-renewable resources are limited in the planet. In this context, electric vehicles (EVs) are increasingly replacing the previous kind of cars. However, as the number of EVs increases, some challenges arise such as the reduction of waiting times in the queues of fast charging stations. The current work addresses this challenge by means of social coordination mechanisms. In particular, this work presents an agent-based simulation framework for simulating the effects of different coordination policies in the route planning of EV drivers for charging their vehicles on their trips. In this manner, researchers and professionals can test different coordination mechanisms for this purpose. This framework has been experienced by simulating an adaptive strategy based on the implicit communication through booking systems in the charging stations. This strategy was compared with another common strategy, which was used as the control mechanism. This comparison was

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