

Optimization of Feeder Bus Routes at Urban Rail Transit Stations Based on Link Growth Probability

Authors : Yu Song, Yuefei Jin

Abstract : Urban public transportation can be integrated when there is an efficient connection between urban rail lines, however, there are currently no effective or quick solutions being investigated for this connection. This paper analyzes the space-time distribution and travel demand of passenger connection travel based on taxi track data and data from the road network, excavates potential bus connection stations based on potential connection demand data, and introduces the link growth probability model in the complex network to solve the basic connection bus lines in order to ascertain the direction of the bus lines that are the most connected given the demand characteristics. Then, a tree view exhaustive approach based on constraints is suggested based on graph theory, which can hasten the convergence of findings while doing chain calculations. This study uses WEI QU NAN Station, the Xi'an Metro Line 2 terminal station in Shaanxi Province, as an illustration, to evaluate the model's and the solution method's efficacy. According to the findings, 153 prospective stations have been dug up in total, the feeder bus network for the entire line has been laid out, and the best route adjustment strategy has been found.

Keywords : feeder bus, route optimization, link growth probability, the graph theory

Conference Title : ICEECT 2023 : International Conference on Environmental Engineering and City Transportation

Conference Location : London, United Kingdom

Conference Dates : March 16-17, 2023