

Traffic Signal Control of the future: Should we do it at intersections?

Prof. R. Jayakrishnan

Thursday, April 13, 2023 10:00 am - 11:00 am (IST)

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ABOUT THE TALK :

For well over a century, traffic signal control has used red and green signals at intersections to avoid collisions during crossing-conflict movements. Signal cycles of more than a minute were required due to startup and clearance lost times, even when queuing delays would be less with lower cycle lengths. Can new technologies help us design better signal control for conflicting streams to flow without accidents? In fact, should we even start with the presumption that crossing movements involve more safety risks than car-following? Can we then imagine signal control that allows designed and timed movements across conflicting streams, perhaps with technology assistance, thus essentially removing vehicle stoppage and signal cycling at nodes? In such a scenario, the control can be in the form of timed flashing greens on approach links rather than at nodes. Dramatically more efficient traffic control designs then become possible and are being developed at UC Irvine. This talk will explain the intuitive basics of traffic control that are traditionally taken for granted and will discuss the possibilities of a new paradigm in traffic control that is link-based.

ABOUT THE SPEAKER :

Prof. R. Jayakrishnan, from Chengannur, Kerala, has been working as a Professor of Civil and Environmental Engineering at the University of California at Irvine since 1991, after receiving his B.Tech from the Indian Institute of Technology, Madras in 1985 and his doctorate from the University of Texas at Austin. He is the Director of the Transportation Science Program at the Institute of Transportation Studies, UC Irvine. His research interests are in a variety of topics such as Traffic Flow Theory and Simulation, Transportation Systems Analysis, Network Modelling, Decision Theory, Intelligent Transportation Systems and Public Transit Design. He has been in the editorial committees of journals such as the ASCE Journal of Transportation Engineering and the Transportation Research series and has served in several professional committees and academic panels of the Federal Highway Administration, National Science Foundation, and the Transportation Research Board of USA. He is also an International Advisor for the Metropolitan Transport Commission of Seoul, S. Korea. 26 Ph.D students have graduated under his advice, with half of them proceeding to faculty positions around the world. He has about 150 refereed publications to his credit.