Mohammad Hoque

Professor Hai Vu, PhD

Melbourne, the host city for the 2016 ITS World Congress, has been consistently ranked as one of the most livable cities of the world for the last few years. One crucial factor behind the high livability index of this city is the continuous development and deployment of ITS infrastructure that greatly reduced the urban congestions with proper planning and management. A number of Australian researchers have significantly contributed towards making these technological advancements in the transportation system. Among these researchers, Professor Hai Vu is clearly the most prominent and leading figure. Indeed, Dr. Vu has been phenomenal in ITS research within the island continent since last 15 years, specializing in DSRC and V2X communication technology. He is a Professor of Telecommunications Engineering and the founding director of the Intelligent Transport Systems Laboratory (ITSL) at Swinburne University of Technology. His research focuses on enabling sustainable future transportation through both efficient utilization of infrastructure and demand management. In 2012, Dr. Vu received the prestigious "Australian Research Council (ARC) Future Fellowship Award" and the "Victoria Fellowship Award in Intelligent Transport Systems". At the same time he also received the "Australian French Association for Science and Technology (AFAS) Fellowship Award". He is serving as a member of the organizing committee for the ITS World Congress.

Hai Vu, PhD.

Dr. Vu established the ITSL in 2012 in partnership with VicRoads, a government agency that manages and operates the 22,000 km long road networks in the state of Victoria, to carry out multi-disciplinary collaborative research in combating urban congestion and managing future transport. The research facility, hosted at Swinburne Hawthorn campus, represents a strategic partnership between universities, research institutions, government agencies and industry to conduct R&D in smart information use to improve traffic flows, and provide better transport systems for Victoria and Australia. His research efforts collected and analyzed traffic data from over 3000 roadway intersections in Melbourne to develop new models and algorithms for improving traffic flow and reducing congestion. In the past five years, Dr. Vu's research has involved i) modelling the impact of ICT and information on travel behavior and network flows; ii) development of scalable approaches for urban traffic control; iii) traffic (big)data analysis, visualization and data fusion of heterogeneous data sources and iv) performance evaluation and design of communication infrastructure and protocols for ITS.

Digital Object Identifier 10.1109/MITS.2015.2439519
Date of publication: 24 July 2015

Over the past few years, Dr. Vu has received several competitive research grants, mostly funded by Australian Research Council (ARC). Two of his current projects funded by ARC primarily relate to congestion control strategies using distributed information. One of his previous grants funded through the Cisco Collaborative Research Initiatives (CCRI) supported his research on improving performance of V2I communication using multi-path TCP. Apart from these projects, Dr. Vu and his ITSL research team conducted a feasibility study of a field operational test integrated network management for Melbourne. The project was successfully completed in 2013 in collaboration with TU Delft, VicRoads and the Australian Road Research Board (ARRB). He is also leading a project jointly with the Swinburne Software Innovation Lab for the development of a bus tracking system with real-time arrival estimation of city buses in Malaysia. The project is part of an International agreement (Memorandum of Understanding) signed in 2014 between Swinburne and Malaysia Automotive Institute (MAI), ARCA Corporation and AutoCRC Ltd., to develop and manufacture electric buses and a commercial vehicle tracking system. His team is also developing new indicator indices and reporting systems for VicRoads in both traffic management and network maintenance jointly with the Swinburne Software Innovation Lab (2014–2015). In 2012, Dr. Vu has developed and demonstrated a fast, reliable prototype of an ITS application based on vehicle-to-vehicle (V2V) communication.

Professor Vu received his PhD in Electrical Engineering from the Technical University of Bucharest in 1999. During that period, he was employed with Siemens Ltd. in Hungary as a Research Engineer (1998–2000) and as a part-time R&D Test Engineer (1994–1998). After that, he switched to Australia to serve in the academia as a researcher. Dr. Vu joined as a research fellow in the department of Electrical and Electronic Engineering at Melbourne University in 2000 and continued there until 2005 when he switched to Swinburne University of Technology as a Senior Lecturer. Later, he had been promoted to Associate Professor and Professor in 2009 and 2013, respectively, in the Faculty of Science, Engineering and Technology. He served as the Associate Dean of Research at Swinburne from 2010 to 2012. As of now, he has supervised a total of 16 PhD students at Swinburne and Melbourne.

Dr. Vu had authored/co-authored over hundred peer-reviewed articles that were published in renowned journals and conferences, including IEEE Transactions on Vehicular Technology, Transportation Research Records, Transportation Research Part C, IEEE Transactions on Mobile Computing, IEEE Transactions on Wireless Communications, IEEE Journal of Selected Areas in Communications, IEEE Intelligent Transportation Systems Conference etc. His research articles received numerous citations from all over the world. According to the Google Scholar citation records, his total number of citations exceeded 2000 with an h-index of 25 and i10-index of 44 which clearly indicates the significance of his research. Finally, Dr. Vu is very active in professional organizations and technical committees of international conferences. ITS

Chess Puzzle Solution

(Solution: **First variant**: 45...Ke4 46. Qg4+ Rf4 47. Qxf4#. If the Black's King tried to escape to the e column, the White Queen would haunt it moving to the fourth row and then even Black's Rook interposition would not prevent a mate. **Second variant**: 45... Kg5 46. Qg2+ Kh6 47. Rh3#. A little trickier, if the Black's King tried to escape to e5, White's elegant move to g2 would give White's Rook space enough to end the job at h4.