

Biography of Dr Ilham Benyahia



My Name is Ilham Benyahia, and I am a Professor in computer science at Université du Québec en Outaouais (UQO). Intelligent Transportation Systems (ITS) have been the main focus of my research activities in the past decade or so. I am currently working on the potential for new contributions to ITS considering traffic congestion and road safety problems with the impact of Connected and Autonomous Vehicles (CAV) and numerous emergent technologies. My research activities related to ITS include advanced modeling of autonomous vehicle behavior for collision avoidance by considering artificial intelligence techniques, dynamic routing problems considering environmental constraints, real time and dynamic traffic management, considering various aspects of data collection, technologies and protocols for vehicular communications and management of emergency vehicles for road safety.

In addition to my academic profile, I also gained experience in industry. In France, I had a position as engineer working on real-time systems and in Quebec as researcher at Hydro-Quebec where I worked on the smart grid project and on the management of telecommunications networks.

With respect to my service activities at ITS Canada, I am about to finish my first term as member of the Board of Directors. During this term, I also held the position of Chair of ITS Education committee. An important change has taken place concerning the MVA scholarship (Michel Van Aerde) in setting up an Essay contest. Main changes have been in the identification for each year of the required topics according to ITS trends in addition to the ACGM conference topics. A collective work I chaired with the evaluation committee made it possible to define new evaluation criteria. A great work has been achieved on detailed specification requirements relating to the content and structure of the essays that will be submitted. The third essay edition in 2020 was highlighted by the excellence of the papers received by the evaluation committee. The high quality demonstrated that there is a promising succession in ITS at several Canadian universities.

As a member of the Board, I always take part in meetings with great enthusiasm and dedication. The context of my first term is very special since it started with the ITS World Congress 2017 in Montreal. I participated in the technical committee of this great and successful event. Another important event is the ITS Canada strategic planning, based on a collaborative activity in which I participated with great interest.

Between 2017 and 2021, I continued my activities in ITS as a researcher and as an expert and member representing ITS Canada. I took part in showcasing various contexts highlighting the contributions of ITS and presenting examples of emerging technologies such as autonomous vehicles and the expected impacts.

Scientific contributions: 1) Journal on Transactions on Intelligent Transportation Systems: I review research papers since several years, 2) Appointed member of the ASI (Autonomous Systems Initiative) Scientific Advisory Committee at the University of Alberta (Since December 2020), 3) Contribution to the content of the article " *Place à la voiture intelligente* " edited by Québec science, April 2019.

Representations of ITS Canada: Since 2010, I represent ITS Canada at TAC Education and Human Resources Council (EHRC) that became known as TAC *Workforce Development Council*. I have participated in several activities in this context in the form of presentations or participation in evaluation committees.

Expert at the national and provincial level: I have participated in several advisory committees related to ITS. 1) In 2017 and 2018, I was part of the ITS plan for Quebec committee organized by the Ministry of Transport, Sustainable Mobility and Transport Electrification. 2) Between 2019 and 2020, I participated in different ACATS (Advance Connectivity and Automation in the Transportation System) workshops for Transport Canada. Since 2020, I have been appointed as member of the ITS-related committees 3) ITS Architecture for Canada Stakeholder Advisory Committee (SAC), and 4) Committee of "*Gatineau Ville Intelligente*", with the City of Gatineau.

Presentations of ITS in the media and at conferences for the general public: In recent years, I took part in showcasing with the media in relation to various situations and incidents on the transport network. 1) Participation in the report of radio Canada, Télé Ici-Ottawa-Gatineau (January 2019) on the safety of double-decker buses, 2) *Le Droit Affaires* (November 2017 edition), I presented information on autonomous vehicles, 3) Tele journal radio Canada Ottawa-Gatineau (September 2018) and August 2019, I talked on the safety issue on Highway 50, 4) Journal le Droit-Gatineau, Ottawa (May 2019), my participation was related to congestions on the road network, 5) Two conferences for the general public organized by the DECLIC center (Center of excellence for dialogue between scientists and the public) on the role of ITS in the face of congestion problems, a) ACFAS conference (*Association Canadienne-Française pour l'Avancement des Sciences*) at UQO in May 2019 and b) Montreal Auto Show in January 2020.

The second term I am seeking will allow me to remain active at the Board of directors and continue my support and contributions for a collective strategic plan concretisation. Regarding my activities as chair of education committee, I intend to pursue the activities related to establishing methods and techniques to face current and future ITS challenges with structured collaborations between ITS experts from various sectors. It will be a continuation of the Round Table I organised for ACGM 2018 and two panels I organised for ITS-TAC conference around different ITS topics and associated challenges. The following activities are already planned or even started: 1) An education day for the ACGM 2021 conference integrating an ITS Virtual panel. It will consider ITS technologies issues as well as questions related to ITS training and collaborations optimisations for the best development achievements. A study on a training program integrating ITS and emergency measures at the municipal level for smart cities is underway. To these activities, I consider two new ITS technical committees: 1) Integration of electric vehicles into CAV technologies and 2) interactions and knowledge disseminations around the challenges of road safety by considering various ITS technologies.