

# Nicolas Saunier

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## EDUCATION

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### **Ph.D. in Computer Science, Telecom ParisTech, 2005**

Title : Influence of traffic control in a signalized intersection on the risk of road users; Stream-based learning of safety indicators through data selection

### **Engineering Degree, Telecom ParisTech, 2001**

Equivalent to a Master's degree in Computer Science and Engineering  
Specialization in Telecommunications, Computer Science and Artificial Intelligence

## FUNDING

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- Principal investigator (+1 researcher), Evaluation of an edge lane road by fixed and mobile observations, MITACS Acceleration and Vivre en Ville, 30000\$, 2023-2025
- Principal investigator (+1 researcher), Pilot Project on the Detection of Micromobility Users, SAAQ, 19600\$, 2024
- Co-investigator (Marie-Soleil Cloutier), Literature Review on Interaction between Drivers and Vulnerable Road Users, SAAQ, 19436\$, 2024
- Principal investigator (+1 researcher), Probabilistic approaches to data-driven path travel time inference and prediction, MITACS Acceleration, Transcality and City of Toronto, 160000\$, 2024-2028
- Co-applicant (Martin Trépanier +2 researchers), Tools and Methods to Predict, Manage and Optimize On-Street Parking, MITACS Acceleration et Agence de Mobilité Durable, 120000\$, 2024-2028
- Co-applicant (Yasuhiro Shiomi +7 researchers), International Comparative Study on the Changes in Traffic Accident Risk Due to Climate Change, International Association of Traffic and Safety Sciences (IATSS), 65000\$, 2024-2026
- Principal investigator, Test and adaptation fo a mobile application for public space study, Société du Parc Jean Drapeau, 5357\$, 2023
- Co-applicant (Marie-Soleil Cloutier +1 researcher), CCP Project : Cyclist-pedestrian cohabitation on pedestrian streets : Part 2, MITACS Acceleration et Ville de Montréal, 48525\$, 2023
- Principal investigator, Pilot project on bike boulevard : study on the understanding, behaviour and safety of vulnerable road users, 29498\$, 2022-2024
- Principal investigator, Analysis of the requirements for cyclist traffic lights at three intersections on Chemin de la Côte Ste-Catherine, Outremont borough, 14700\$, 2022-2023
- Co-investigator (Guillaume-Alexandre Bilodeau +1 researcher), Detection and Tracking of Users of Public Spaces to Improve the Infrastructure, FRQNT Team grant, 150000\$, 2023-2026
- Principal investigator, Engineering Sustainable and Inclusive Streets for the 30Min City, Dis-

- covery Grant, NSERC, 295000\$, 2023-2028
- Principal investigator, Analysis of the needs for bike traffic lights at two intersections on Chemin de la Côte Ste-Catherine, Arrondissement d'Outremont, 9800\$, 2022-2023
  - Co-investigator (Marie-Soleil Cloutier), PLAZA Project : Evaluation of the pilot project of autonomous shuttles on the St-Hubert street, Laboratoire d'Innovation Urbaine de Montréal (LIUM), MITACS Acceleration, 45000\$, 2022-2023
  - Collaborator (Pierre-Marjorie Léger, Sylvain Sénécal +2 researchers), Human-centered AI : From Algorithm Development to Human Adoption of AI, IVADO, Strategic Research Funding Program, 100000\$, 2021-2024
  - Collaborator (Pierre Maurice +2 researchers), Monitoring of Road Safety and Transport Modes with the Built Environment and their Health Impacts, Public Health Agency of Canada, 50000\$, 2021-2023
  - Co-applicant (Martin Trépanier + 99 researchers), Centre interuniversitaire de recherche sur les réseaux d'entreprise, la logistique et le transport (CIRRELT), Strategic Cluster Programs of the FRQNT (3000000\$), 2022-2028
  - Principal investigator (+4 researchers), COVID-19, behaviour and road safety : assessment and lessons from a disruption, Road Safety Research Program, FRQSC in partnership with SAAQ, 150000\$, 2022-2025
  - Principal investigator, Road User Detection, Tracking and Activity Recognition for Sustainable Cities, NVIDIA Academic Hardware Grant Program, 11000USD, 2021
  - Co-applicant (PI Marie Claude Ouimet +5 researchers), Road Safety Research Network, MTQ and SAAQ, 137666\$, 2021-2023
  - Co-applicant (PI Marie-Soleil Cloutier +3 researchers), Cyclist-pedestrian co-existence in pedestrian streets : Pilot project on the Mont-Royal Avenue, Boroughs le Plateau Mont-Royal and Verdun, 32670\$, MITACS Acceleration 45000\$, 2021-2022
  - Co-applicant (PI Bruno Agard +1 researcher) Developing a detection tool for anomalies in truck operation data and in the battery system developed by Effenco, Effenco, 31500\$, 2021-2022
  - Co-chercheur (PI Martin Trépanier +1 researcher) Consulting mandate for the City of Candiac in the feasibility study on the intergration of a completely electric and autonomous transport mode in the TOD project of the Candiac train station, City of Candiac, 30000\$, 2021-2022
  - Co-applicant (PI Aurélie Labbe +4 researchers), Understanding traffic safety from telematics data, MITACS Acceleration with Intact Insurance, 650539\$, 2020-2024
  - Principal investigator (+3 researchers), Collaborative design and evaluation of transport facilities for all users during the COVID-19 pandemic, NSERC Alliance, City of Montréal, 45000\$, 2020-2021
  - Co-applicant (PI Marie-Soleil Cloutier +4 researchers), COVID-19 Children active transportation during a pandemic : what facilities for safe school environments ?, SHRC Partnership Engage Grant, City of Montréal, 62360\$, 2020-2021
  - Co-applicant (+1 researcher), A KPI ontology for innovative modes of transportation, GeoTwin, 25200\$, 2020-2021
  - Principal investigator (+4 researchers), Bridging Data-Driven and Behavioural Models for Transportation, Fundamental Research Funding Program, IVADO, 194250\$, 2020-2023
  - Co-applicant (PI Marie-Soleil Cloutier +2 researchers), Social acceptability and road safety of autonomous shuttles on public roadways, MTQ-SAAQ-Fondation CAA Québec, 95800\$, 2019
  - Co-applicant (PI Mohamed Cheriet +80 researchers) Centre interdisciplinaire de recherche sur l'opérationnalisation du développement durable (CIRODD), FRQ, 600000\$, 2019-2025
  - Principal investigator, Validation of counting technologies for vehicles at the entrance of a parking lot, Exo, 7700\$, 2019
  - Principal investigator (+5 researchers), Smart Cities and Mobility : Technologies and Society, Stages MITACS Acceleration with Jalon Montréal, 400000\$, 2018-2021
  - Co-applicant (PI Catherine Morency +3 researchers), Development and deployment of the

- OSC<sup>2</sup>AR tool for the monitoring and analysis of traffic condition on the road network, MTQ, 346963\$, 2018-2021
- Co-applicant (PI Brunilde Sansò +2 researchers), Machine experience in an IoT / smart-city environment, Collaborative Research and Development Grant, NSERC CRD with Ericsson, 493727\$, 2018-2021
  - Principal investigator (+4 researchers), Fundamental Challenges for Big Data Fusion and Strategic Transportation Planning, Fundamental Research Funding Program, IVADO, 139500\$, 2018-2019
  - Co-applicant (PI Guillaume-Alexandre Bilodeau +2 researchers), Road user tracking and trajectory clustering for intelligent transportation systems, Fundamental Research Funding Program, IVADO, 130500\$, 2018-2019
  - Collaborator (Marc-André Tousignant, CIMA+), Position of the City of Montréal on connected and autonomous vehicles in the context of the update of the 2008 transportation plan, City of Montréal, 54000\$, 2017
  - Co-applicant (PI Guillaume-Alexandre Bilodeau), Detection and classification of road users for video surveillance applications, Collaborative Research and Development Grant, NSERC, 80700\$, 2017-2021
  - Principal investigator, More than transportation : An integrated framework to evaluate how streets serve all users, Discovery Grant, NSERC, 306000\$, 2017-2023 (+ Discovery Accelerator Supplement, 120000\$, 2017-2020)
  - Co-applicant (PI Marie-Soleil Cloutier +1 researcher), Measuring the impact on road safety of speed limit changes on the Québec road network, MTMDET, 99138\$, 2017-2018
  - Half postdoctoral scholarship for Paul St-Aubin, IVADO, 35000\$/year, 2017-2018
  - Principal investigator (+1 researcher), Benchmarking Mandate - The Mitigation Program of the City of Montréal, City of Montréal, 51310\$, 2017
  - Co-applicant (PI Catherine Morency), Assessment of the Potential Environmental Benefits of Connected Vehicle Technology for Canada, Transport Canada, 25000\$, 2016-2017
  - Co-applicant (PI Marie-Soleil Cloutier +2 chercheurs), Road Accidents at Work : What About Pedestrian Workers ?, Institut de recherche Robert-Sauvé en santé et en sécurité du travail (IRSST), 174000\$, 2016-2018
  - Collaborator (PI Luis Miranda-Moreno +3 researchers), Pilot project on the safety of 4-way stop controlled intersections, Ville de Montréal, 199500\$, 2016-2018
  - Collaborator (PI Luis Miranda-Moreno), Revision of the norms for variable message signs in the context of their new uses and of new technologies, MTQ, 95000\$, 2015-2017
  - Principal investigator (+1 researcher), Development of a traffic data collection tool using cameras, Research contract with WSP, 6000\$, 2015
  - Co-applicant (PI Guillaume-Alexandre Bilodeau +1 researcher), Development of a system for the detection and tracking of road users for adaptive traffic control, FRQNT Team Grant, 143760\$, 2015-2018
  - Principal investigator, Calibration and Validation of Micro-Simulation Models, NSERC ENGAGE program, 24750\$, 2015
  - Co-applicant (PI Aliaksei Lareshyn, Lund University + 8 institutions), InDeV : In-Depth understanding of accident causation for Vulnerable road users, European Commission Horizon 2020 program, 4900000€, 2015-2018
  - Co-applicant (Bernard Gendron + 65 researchers), Centre interuniversitaire de recherche sur les réseaux d'entreprise, la logistique et le transport (CIRRELT), Strategic Cluster Programs of the FRQNT (2448000\$) and FRQSC (450000\$), 2015-2022
  - Principal investigator, Cyclist Safety at Urban Intersections, Québec Fund for Research on Nature and Technology (FRQNT) Établissement de nouveaux chercheurs universitaires, 49060\$, 2014-2016
  - Principal investigator (+4 researchers), Strategy for the experimentation of intelligent speed adaptation systems and speed loggers, MTQ, 72050\$, 2014-2016
  - Collaborator (PI Catherine Morency +1 researcher), Development of a tool for traffic monitoring and analysis on the MTQ road network in the greater Montreal area, MTQ, 160000\$,

2013-2016

- Co-applicant (PI Catherine Morency +3 researchers), Technical note on the technological stakes of a traveled distance tax in the region of the Montréal Metropolitan Community, Montréal Metropolitan Community, 25000\$, 2014
- Collaborator (PI Luis Miranda-Moreno), Analysis of the impact of the bi-directional cycling path on Chemin de la Côte-Ste-Catherine on pedestrian and cyclist safety, City of Montréal, 25000\$, 2013-2014
- Principal investigator (+2 researchers), Microscopic data collection for the calibration and validation of traffic micro-simulation tools for highways, City of Montréal, 21000\$, 2012-2014
- Co-applicant (Luis Amador + 2 researchers), Road safety and lighting evaluation, Road Safety Research Program, FRQNT, MTQ and Québec Fund for Health Research (FRSQ), 115500\$, 2012-2015
- Principal investigator (+5 researchers), Development of a diagnosis method and action plan for road safety on the municipal road network, MTQ, 150000\$, 2012-2014
- Principal investigator (+12 researchers), Platform for Transportation Data Archiving, Processing, Analysis and Visualization, Natural Sciences and Engineering Research Council of Canada (NSERC), 115165\$, 2012
- Principal investigator, Relations of the main factors influencing pavement marking (durability and retroreflectivity), MTQ, 35000\$, 2012-2014
- Collaborator, Open 511 / 511 Ouvert, An integrated and standard framework to manage and publish road events, GeoConnections, 175000\$, 2012-2013
- Principal investigator, Pilot project for the study of the safety of all road users using video data, City of Montréal, 4700\$, 2011-2012
- Principal investigator, Literature review on retro-reflectivity issues of pavement markings, MTQ, 15000\$, 2011
- Principal investigator (+5 researchers), Roundabout Safety in Québec, Road Safety Research Program, FRQNT-MTQ-FRQS, 150000\$, 2011-2014
- Co-applicant (PI Luis Miranda-Moreno +4 researchers), How to improve cyclist safety at intersections and bike corridors in urban Quebec? The role of geometric design, built environment and traffic movements on cyclist injuries, Road Safety Research Program, FRQNT-MTQ-FRSQ, 150000\$, 2011-2014
- Principal investigator, Study of collision factors and processes using microscopic data, Discovery Grant, NSERC, 125000\$, 2011-2016
- Collaborator (PI Luis Miranda-Moreno +4 researchers), Traffic and Air Quality : Completion of Highway 25, MTQ, 2011-2014
- Co-applicant (PI François Bellavance +32 researchers) for the Network for Research and Innovation in Road Safety, Support for Innovation Networks funded by the FRQNT, 2010-2014
- Principal investigator, Detailed accident modeling using microscopic data, grant of the Research and Innovation Directorate of Polytechnique, 15000 \$, 2010
- Principal investigator, Automated classification of accidents and interactions using microscopic data, grant for young professors of the "Fondation de Polytechnique", 15000 \$, 2009
- Collaborator (PI Tarek Sayed), Truck signal priority project, Transport Canada and the British Columbia Ministry of Transportation (within the Bureau for Intelligent Transportation Systems and Freight Security), 2008
- Postdoctoral Fellowship in the Department of Civil Engineering of University of British Columbia (UBC), funded in part by the Insurance Corporation of British Columbia, 2005-2008
- Ph.D. scholarship, funded by French National Institute for Transport and Safety Research (INRETS)<sup>1</sup> and the "région Ile de France", 2001-2005

## **AWARDS**

1. Now Université Gustave Eiffel, formerly French institute of science and technology for transport (IFSTTAR)

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1. Researchers' jury favourite award at the 9th Québec Road Safety Research Network (RRSR) Workshop for W. Do for the presentation "An empirical analysis of the effect of pedestrian-signal countdown timer on driver behavior at signalized intersections" in 2022
  2. Partners' jury favourite award at the 9th Québec Road Safety Research Network (RRSR) Workshop for F.-Z. Dahak for the presentation "Étude de la cohabitation des cyclistes et piétons sur des rues piétonnes par analyse vidéo" in 2022
  3. Springer Best Paper Awards for "RN-VID : A Feature Fusion Architecture for Video Object Detection" presented at the 17<sup>th</sup> International Conference on Image Analysis and Recognition in 2020
  4. Second prize of the student journal paper competition from the Québec Road Safety Research Network (RRSR) for "Is that move safe? case study of cyclist movements at intersections with cycling discontinuities" published in Accident Analysis & Prevention by M. Nabavi Niaki, N. Saunier, and L. F. Miranda-Moreno in 2020
  5. Third place winner of the student poster award of the Québec Road Safety Research Network (RRSR) Workshop for T. Fu for presenting "Investigating Secondary Pedestrian-vehicle Interactions at Non-signalized Intersections using Vision-based Trajectory Data" by T. Fu, W. Hu, L. F. Miranda-Moreno, and N. Saunier in 2019
  6. Second prize of the student journal paper competition from the Québec Road Safety Research Network (RRSR) for "Novel framework to evaluate pedestrian safety at non-signalized locations" published in Accident Analysis & Prevention by T. Fu, L. F. Miranda-Moreno, and N. Saunier in 2018
  7. First place winner of the Transportation Association of Canada (TAC) Student Paper Award for the paper "Surrogate Safety and Network Screening : Modelling Crash Frequency Using GPS Data and Latent Gaussian Models" (authors : J. Stipanovic, L. F. Miranda-Moreno, N. Saunier and A. Labbe), 2017
  8. Participant in the Future Leaders Program of the 2017 Science and Technology for Society (STS) Forum in Kyoto
  9. Third prize of the Canadian Association of Road Safety Professionals (CARSP) Conference Student Paper Competition for the paper "A Novel Framework to Evaluate Yielding Behavior and Crossing Decisions at Non-signalized Locations using Video-based Trajectory Data" (authors : T. Fu, L. F. Miranda-Moreno, and N. Saunier), 2017
  10. First prize of the student journal paper competition from the Québec Road Safety Research Network (RRSR) for "Automatic Traffic Data Collection under Varying Lighting and Temperature Conditions in Multimodal Environments : Thermal vs Visible Spectrum Video-Based Systems" published in the Journal of Advanced Transportation by T. Fu, J. Stipanovic, S. Zangenehpour, L. F. Miranda-Moreno, and N. Saunier in 2017 and third place for "Investigating the Effects of Gender on Bicycle-Vehicle Conflicts at Urban Intersections Using an Ordered Logit Methodology" published in Accident Analysis & Prevention by J. Stipanovic, S. Zangenehpour, L. F. Miranda-Moreno, N. Saunier and M.-A. Granié in 2016
  11. Third place winner of the Transportation Association of Canada (TAC) Student Paper Award for the paper "Traffic data Collection using Thermal Camera under Varying Lighting and Temperature Conditions in Multimodal Environments" (authors : T. Fu, J. Stipanovic, S. Zangenehpour, L. Miranda-Moreno, and N. Saunier), 2016
  12. Third prize of the Canadian Association of Road Safety Professionals (CARSP) Conference Student Paper Competition for the paper "Automatic Traffic Data Collection under Varying Lighting and Temperature Conditions in Multimodal Environments" (authors : T. Fu, J. Stipanovic, S. Zangenehpour, L. Miranda-Moreno, and N. Saunier), 2016

13. First prize of the Canadian Association of Road Safety Professionals (CARSP) Conference Student Paper Competition for the paper "Are Intersections with Cycle Tracks Safer? Control Case Study Based on Automated Surrogate Safety Analysis Using Video Data" (authors : S. Zangenehpour, J. Strauss, L. Miranda-Moreno, and N. Saunier), 2015
14. Second prize of the Canadian Multidisciplinary Road Safety Conference (CMRSC) Student Paper Competition for the paper "Automated Classification Based on Video Data at Intersections with Heavy Pedestrian and Bicycle Traffic : Methodology and Application" (authors : S. Zangenehpour, L. Miranda-Moreno, and N. Saunier), 2014
15. Young Researcher Award of the Transportation Research Board (TRB) Committee on Safety Data, Analysis, and Evaluation (ANB20) "Investigating Collision Factors by Mining Microscopic Data on Vehicle Conflicts and Collisions" (authors : N. Saunier, N. Mourji, and B. Agard), 2011
16. First prize of the Canadian Association of Road Safety Professionals/Insurance Bureau of Canada 2011 Student Paper Competition for the paper "Analysis of Driver Behaviour and Collision Risks for Specialized Lane Markings : Protected Freeway Entrance and Exit Ramps" (authors : P. St-Aubin, L. Miranda-Moreno, and N. Saunier), 2011
17. Young Researcher Award of the TRB Committee ANB20 for the paper "Large Scale Automated Analysis of Vehicle Interactions and Collisions" (authors : N. Saunier, T. Sayed, and K. Ismail), 2010
18. First prize of the Canadian Association of Road Safety Professionals/Insurance Bureau of Canada Student Paper Competition for the paper "Automated safety analysis using video sensors : Technology and case studies" (authors : K. Ismail, T. Sayed, and N. Saunier), 2010
19. TRB Pedestrian committee outstanding paper award for the paper "Automated Analysis Of Pedestrian-vehicle Conflicts : A Context For Before-and-after Studies" (authors : K. Ismail, T. Sayed and N. Saunier), 2010

## ACADEMIC AND RESEARCH EXPERIENCE

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### **Invited Researcher**

Researcher at the Chair of Bicycle Traffic ("Radverkehr") of "Bergische Universität Wuppertal", Germany

*juin, juillet, octobre 2022*

### **Full Professor**

Associate Professor in Transportation at the Department of Civil, Geological and Mining Engineering of Polytechnique

*June 2018 to present*

### **Associate Professor**

Associate Professor in Transportation at the Department of Civil, Geological and Mining Engineering of Polytechnique

*June 2014 to May 2018*

### **Invited Researcher**

Researcher at Transport and Roads, Lund University, Sweden

*February to June 2015*

### **Invited Researcher**

Researcher at Institut Pascal, Clermont-Ferrand, France. Collaboration on computer vision methods for transportation data collection

*May 2013*

### **Assistant Professor**

Assistant Professor in Transportation at the Department of Civil, Geological and Mining Engineering of Polytechnique

*September 2009 to May 2014*

**Research Associate***May 2005 to August 2009*

Postdoctoral Fellow till June 2008, research associate then, at the Department of Civil Engineering of UBC, Vancouver, under the guidance of Dr. Tarek Sayed. Research on Automated Road Safety Analysis Using Video Sensors.

**Ph.D. Student***October 2001 to April 2005*

Ph.D. student at Telecom ParisTech and INRETS. Research in Machine Learning applied to Road Safety, dealing with the "Influence of traffic control in a signalized intersection on the risk of road users; Stream-based learning of safety indicators through data selection", supervised by Dr. Alain Grumbach and Dr. Sophie Midenet.

**Engineering Intern***July to December 2000*

Intern at Advanced Telecommunication Research International, Kyoto. Research on Reinforcement Learning and the automatic tuning of meta-parameters, supervised by Dr. Kenji Doya, in Dr. Mitsuo Kawato's research group.

**Internship***August 1997*

Intern at the Physics research centre "Laboratoire de l'Accélérateur Linéaire", Orsay, France

**RESEARCH INTERESTS**

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- Surrogate measures of safety, i.e. that do not depend on the occurrence of accidents
- Automated traffic and road user behaviour analysis
- Information technology and intelligent transportation
- Alternative modes of transportation (walking, biking) : active and vulnerable users

**COURSES TAUGHT**

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- Traffic Flow Theory (in french) (Polytechnique, CIV6705, 2011-2014, 2016-2019)
- Traffic Engineering (in french) (Polytechnique, CIV8740, 2010-2014, 2016-2019, 2021-2024)
- Transportation Data Management (in french) (Polytechnique, CIV8760, 2010, 2012-2017, 2019-2021, 2023)
- Traffic Data Collection (National Course on Special Topics in Transportation Engineering, 2013)
- Surrogate Safety Analysis (National Course on Special Topics in Transportation Engineering, 2012)  
The Team Canada Alliance for Transportation Teaching received the 2012 TAC Educational Achievement Award.
- Data Collection and Processing for Safety Analysis (McGill University, invited talk in CIVE-560 Transportation Safety and Design, 2011)
- Surrogate Safety Analysis (McGill University, invited talk in CIVE-546 Road and Rail Safety Analysis, 2010, CIVE 560 Transportation Safety and Design, 2012-2013, CIV540 - "Road Safety", 2017)
- Introductory Course on ITS, short presentation "The 'I' of ITS" (UBC, Vancouver, CIVL 440, Vancouver, 2007)
- Java Module, preparation of the lectures, lab work and exam, given in English (Telecom ParisTech, Master of Science, Computer Science Introductory Course, 2003, 2004)
- Initiation to Internet and the HTML language, lectures and lab work (Telecom ParisTech, Master Management and Information Technologies, 2003, 2004)

**TEACHING INTERESTS**

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- Transport : intelligent transport, road safety, transport data collection

- Computing for transport engineering : data science, machine learning, artificial intelligence, database systems and programming languages

## SERVICE AND PROFESSIONAL ORGANIZATIONS

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- Member of the Interuniversity Research Centre on Enterprise Networks, Logistics and Transportation (CIRRELT) since 2011, and co-head of the ITS lab of CIRRELT (with Teodor Gabriel Crainic, Université du Québec à Montréal) since 2012, member of the CIRRELT executive committee (2019-2023), member of the EDI committee since 2021
- Member of the Institute for Data Valorization (IVADO) since its creation in 2016
- Member of the Centre interdisciplinaire de recherche en opérationnalisation du développement durable (“Interdisciplinary Research Centre on the Implementation of Sustainable Development”, CIRODD) depuis 2018
- Member of the scientific committee of the International Chair on the use and practice of the smart city (chaire internationale sur les usages et pratiques de la ville intelligente) at UQàM since 2022
- Member of the Academic Council of Polytechnique since 2015
- Responsible of the committee on generative AI and teaching at Polytechnique since 2023
- Member of the council of the Polytechnique professors’ union (APEP) (2012-2014, 2023-2025)
- Member of the tenure evaluation committee of Polytechnique (2017, 2019-2023)
- Substitute member of the sabbatical evaluation committee of Polytechnique (2023, 2025)
- President (substitute) of the student discipline committee (academic affairs) (2020-2021)
- Member of the COVID-19 protection committee for the University of Montréal campus (2020)
- Senior associate of the Canadian Automated Vehicles Centre of Excellence (CAVCOE) since 2013
- Member of the Québec Road Safety Research Network (RRSR) since 2010 and of the executive committee since 2018
- Member of the expert table on Intelligent Mobility (Intelligent Transportation Systems, ITS) of the Québec Transportation Association (AQTr)
- Co-chair of the SAE International committee on Surrogate Measures of Safety since 2017
- Member of the TRB committee on Safety Data, Analysis and Evaluation (ANB20-ACS20) (2011-2022), Artificial Intelligence and Advanced Computing Applications (ABJ70) (2011-2017) and on Pedestrians (ANF10) (2011-2020)
- Co-chair of the TRB subcommittee on surrogate measures of safety since 2013 and paper review coordinator for ANB20-ACS20 (2016-2020)
- Member of the scientific committee of the “Observatoire du vélo du Québec” (Observatory of cycling in Quebec) (2023-2025)
- Member of the Technology Council of the Transportation Association of Canada (TAC) since 2020
- Member of the TAC Connected and Automated Vehicle (CAV) task force (2019-2022) and the Connected & Automated Vehicles Integrated Committee since 2022
- Member of the CSA EXP150.1 Working Group for Digital Infrastructure Guideline for Connected and Automated Vehicles (2021-2023) (publication of the “Guidelines for connected and automated vehicles : Digital infrastructure” in January 2023)
- Co-chair of paper and panel session committee of the TAC Road Safety Standing Committee (2016-2018)
- Member of the committee on active transportation of the Outremont borough (2015-2017)
- Initiator and member of the Committee on Traffic Modelling (2015-2016)
- Member of the Internal Management Committee of the Research Chair on evaluation and implementation of sustainability in transportation of Polytechnique (MOBILITÉ Chair) (2010-2018)
- Corresponding member of the technical committee “Road Network Operations” (TC 2.1) of

- the World Road Association (PIARC) (2013-2015)
- o Member of the consultation table on open data of the City of Montréal (2012-2013)

## **WORKSHOP ORGANIZATION, EDITOR AND REVIEWER**

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- o Workshop/Conference organization : International Symposium on Transportation Data & Modelling (ISTDM2025), International Cooperation on Theories and Concepts in Traffic safety (ICTCT) in 2025, Workshop at the TRB Annual Meeting on “Reproducible Research : Why, What, and How”, Washington 2024, World Congress on Transportation Research (WCTR) 2023, Workshop at the TRB Annual Meeting on “Surrogate measures of safety for heterogeneous traffic : automation, cyclists and pedestrians”, Washington 2020, 3 sessions at RFTM 2019 (“Daily walking : what are the criteria for urban pedestrian facilities?”, “New mobilities and automated vehicles” and “Automated vehicles : legal impacts and project governance”), AQTr workshop on automated vehicles 2018, Human Factor Workshop at the TRB Annual Meeting on Walking at Night : the Pedestrian’s Perspective, or “The Dangers of the Night-Walkers”, Washington 2017, 1st and 2nd Workshop on Automatic Traffic Surveillance (ATS 2015 and 2016), Karlsruhe and Las Vegas, Workshop at the TRB Annual Meeting on the “Comparison of Surrogate Measures of Safety Extracted from Video Data”, Washington 2014, Hands on Sustainable Urban Mobility (A Canada-Germany Summer Workshop), Montréal 2013-2014, member of the organizing committee of the workshop “La ville sous nos pieds : Connaissances et pratiques favorables aux mobilités piétonnes” (COPIE) in 2013 in Montréal, joint call for paper “Modelling pedestrians and motorized traffic” sponsored by the Traffic Flow Theory and Characteristics (AHB45) and Pedestrian (ANF10) committees for the 2012 TRB Annual Meeting
- o Journals : editorial board member of Traffic Safety Research (2022-), Transportation Research Record (2019-), Findings (initially Transport Findings) (2018-), IATSS Research (2018-), Transaction on Transport Sciences (2016-), International Journal of Automation and Logistics (Inderscience) (2012-2020), IEEE Magazine on Intelligent Transportation Systems (2009-2011), guest associate editor for the Canadian Journal of Civil Engineering (2006)
- o Scientific committees : French Meetings on Transport and Mobility (RFTM) since 2018, Canadian Multidisciplinary Road Safety Conference (now CARSP) since 2011, workshops organized by the integrating platform on pedestrian behaviour in its space (“plateforme intégratrice sur le Comportement du Piéton dans son Espace de circulation”, COPIE) (IFSTTAR) 2011, 2013 and 2016, French international workshop on Pedestrian Urban Mobility 2015, Agent-based Approaches for Transportation Modelling and Optimization (AATMO’2013-2014) Workshop, International Conference on Connected Vehicles & Expo (ICCVE) 2012-2015, 2019
- o Reviewer
  - o Academic promotion : Université Laval 2022
  - o Student Scholarships : member of the FRQNT committee for the evaluation of Ph.D. scholarships in Information and Communication Technologies (B2 05A) 2020-2023, member of the FRQNT committee for the evaluation of applications for Master’s and Ph.D. scholarships in the field of transportation 2017-2019, student scholarship program of AQTr (Master’s) 2017, TAC Graduate Student Scholarships 2013-2020, RRSR student scholarships 2020, RRSR paper award 2019
  - o Evaluation committees : Solar Decathlon Europe urban mobility committee (2022)
  - o Research Proposals :
    - NSERC Alliance program 2021, NSERC CRD grants program 2011, 2013, 2019, NSERC Discovery grants program 2016-2017, 2020-2021, 2023,
    - NSERC Research Tool and Instruments (RTI) selection committee for Civil, Industrial and Systems Engineering 2021-2023,
    - Prompt : member of a committee of the Prompt PARTENAR-IA program 2021 (6 proposals), president and member of a committee of the program Prompt-AI - In-

- novation Program 2020 (4 proposals),
- InnovÉÉ - Ministère de l'Économie et de l'Innovation (MEI) : member of the technico-economic evaluation committee of PARTENAR-IA program 2021 (6 proposals), of the artificial intelligence program 2020 (4 proposals), of the program 2019 (1 proposal),
- IVADO Fundamental Research Project Grants (2017, 2019 (4)),
- member of the evaluation committee for a Canada Research Chair (Tier 2) at UQTR 2017,
- Ontario Research Fund - Research Excellence Round 8 2016,
- Comisión Nacional de Investigación Científica y Tecnológica (CONICYT), INICIACION 2015,
- Research Foundation - Flanders (FWO), Postdoctoral Fellow application 2014,
- Mitacs Accelerate program 2017-2018, 2020, Mitacs Elevate postdoctoral fellowship program 2013,
- Agence Nationale de la Recherche (ANR) PRCE France 2017, 2022,
- Israeli Smart Transportation Research Center, Technion University, 2021,
- Israel Science Foundation (ISF) 2017,
- Portuguese Foundation for Science and Technology (FCT) 2012,
- ITS Institute at the University of Minnesota 2011, 2013,
- University of California Transportation Centre 2010
- Journals : Transportation, IEEE Access, Accident Analysis & Prevention, Journal of Open Source Software, Transaction on Transport Sciences, Transportmetrica A : Transport Science, Journal of Advanced Transportation, Transportation Letters : the International Journal of Transportation Research, Traffic Injury Prevention, Journal of Transportation Safety & Security, Advances in Transportation Studies : An International Journal, ASCE Journal of Transportation Engineering, Advances in Mechanical Engineering, The Spanish Journal of Psychology, Modern Traffic and Transportation Engineering Research, Asia-Pacific Journal of Operational Research, Journal of Transportation Planning and Technology, Transportation Research Part A and C, Computer-Aided Civil and Infrastructure Engineering, Computer Vision and Image Understanding, IEEE Transactions on Pattern Analysis and Machine Intelligence, Signal Processing : Image Communication, IEEE Transactions on Intelligent Transportation Systems, IEEE Transactions on Vehicular Technology, IEEE Transactions on Neural Networks, Canadian Journal of Civil Engineering, Recherche Transport et Sécurité
- Conferences : Transportation Research Board Annual Meeting 2006-2021, Montreal AI Symposium 2020, KDUIRC 2019, 2019 TAC-ITS Canada Joint Conference & Exhibition, ASCE International Conference on Transportation & Development 2018, ACM/IEEE/IFAC/TRB 2012 International Conference on Connected Vehicles & Expo (ICCVE 2012-2014), 3rd International Conference of Road Safety and Simulation 2011, IEEE Conference on Intelligent Transportation Systems 2010, 2016, Congrès de l'Acfas 2010, IEEE International Conference on Acoustics, Speech, and Signal Processing 2009, 2011, International Gulf Conference on Roads 2008, IEEE International Conference on Image Processing 2006-2009, 2011, International Joint Conference on Neural Networks 2007, 2009, 2011, American Control Conference 2005-2006, IEEE Conference on Decision and Control 2004

## SOFTWARE

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- Traffic Intelligence : open source tools for traffic video analysis and trajectory processing <https://trafficientelligence.confins.net>
- Trajectory Management and Analysis : open source tools for trajectory management and processing, available in Traffic Intelligence

## SKILLS

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## Computer

Programming languages : Python, C/C++, Java, Matlab, Gensym G2, notions of Lisp, Perl, Shell  
Toolboxes/libraries : Scientific Python, OpenCV, Boost, FLTK, Weka  
Environments : Unix/Linux, MacOS, Windows  
Typesetting : L<sup>A</sup>T<sub>E</sub>X, OpenOffice, Office, XHTML, CSS

## Languages

French : Native speaker  
English : Fluent  
German : Good oral and written level (ZMP)  
Japanese : Notions (Japanese Proficiency Test, level 4)

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## PUBLICATIONS

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- [2] H. Blache, N. Saunier, H. Mellah, and B. Sansò. Towards a comprehensive mapping of telecommunication technology requirements for connected vehicle applications : Introducing an open-source tool. *European Transport Research Review*, 2024. Submitted and revised.
- [3] H. Blache, P.-A. Laharotte, N.-E. El Faouzi, and N. Saunier. Unifying expert knowledge and field data toward an enhanced scenario description for cav certification : A comprehensive scenario-based approach. *Journal of Intelligent Transportation Systems : Technology, Planning, and Operations*, 2024. Submitted.
- [4] T. Fortin and N. Saunier. Study of bicycle boulevard improvements : Will they notice? In *Transportation Research Board Annual Meeting*, 2025. TRBAM-25-04364.
- [5] Z. Yan, D. Zhang, N. Saunier, L. Yue, and J. Sun. Causality modeling and analysis of crash risk during interactions between motorized and non-motorized vehicles based on double machine learning. In *Transportation Research Board Annual Meeting*, 2025. TRBAM-25-06160.
- [6] F.-Z. Dahak and N. Saunier. Assessing the safety of cyclist-pedestrian interactions in seasonal pedestrian streets using computer vision techniques. *Transportation Research Record*, 2025. Accepted.
- [7] M. Miah, G.-A. Bilodeau, and N. Saunier. Learning data association for multi-object tracking using only coordinates. *Pattern Recognition Letters*, 2025. Available as arXiv :2403.08018.
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- [11] T. Fortin and N. Saunier. Study of bicycle boulevard improvements : Will they notice? In *International Cycling Safety Conference*, 2024.
- [12] N. Saunier and E. K. M. Houndjafo. Estimating safety gains for cyclists at signalized intersections with protected and exclusive phases using video analysis. In *International Cycling Safety Conference*, 2024.

- [13] N. Saunier and A. SheikhMohammadZadeh. Cohabitation cyclistes-piétons sur les rues piétonnes ; projet-pilote sur l'avenue du mont-royal, la rue wellington, la rue ontario, l'avenue duluth et la rue de castelnau ; rapport 3 : Observations des cyclistes. Technical report, Polytechnique Montreal, 2024.
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- [16] E. K. M. Houndjafo and N. Saunier. Analyse des besoins pour des feux cyclistes à trois deux carrefours du chemin de la côte ste-catherine. Technical report, Polytechnique Montreal, 2024.
- [17] W. Do, N. Saunier, and L. F. Miranda-Moreno. Evaluation of conventional safety indicators for connected and automated vehicles in car following at signalized intersections. *Transportation Research Record*, 2024. Presented at the 2023 Transportation Research Board Annual Meeting.
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- [23] Z. Yan, L. Yue, N. Saunier, and J. Sun. Investigating and modeling motorized and non-motorized interaction behavior in shared spaces of intersections. In *Transportation Research Board Annual Meeting*, 2024. 24-06090.
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- [29] W. Do, N. Saunier, and L. F. Miranda-Moreno. An empirical analysis of the effect of pedestrian-signal countdown timer on driver behavior at signalized intersections. *Accident Analysis & Prevention*, 180, February 2023. Presented at the 2023 Transportation Research Board Annual Meeting.

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## INVITED TALKS

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1. Mobilités actives : conflit et aménagement, Le cas des cyclistes sur les rues piétonnes à Montréal, 3<sup>es</sup> Journées francophones de la sécurité routière (3rd Francophone Road Safety Days), Champs-sur-Marne, October 16th 2024
2. Extraction et analyse automatisées des données ouvertes de débits de circulation au Québec, presentation to the expert table on smart mobility of AQTr, Montréal, March 27th 2024
3. Open-Source Projects : Machine Learning for Transportation Data Imputation and Prediction, X. Chen and N. Saunier, TRB Reproducible Research Workshop, Washington, January 11th 2024
4. Les technologies pour la vision zéro, presentation to the expert table on smart mobility of AQTr, Montréal, November 29th 2023
5. Des outils pour comprendre le fonctionnement des espaces publics, Workshop of the International Chair on the use and practice of the smart city, Montréal, May 4th 2023, and Conference of the Order of Urban Planners of Québec, Sherbrooke, November 1st 2023
6. Notre relation amour/haine avec l'IA, P.-M. Léger, S. Sénécal, J. T. Martineau, F. Khomh and N. Saunier, 90e Acfas conference, Mai 10th 2023
7. A Canadian Perspective on Safe Signalized Intersections, Which Features are Beneficial to Operate Safe Signalized Intersections?, Workshop of the 10th International Cycling Safety Conference, Dresden, November 8th 2022
8. Road Safety Analysis using Trajectory Data : At the Intersection of Naturalistic and Simulation Studies, WCTR 2022 virtual event, SIG C4 : Traffic Safety Analysis and Policy, July 29th 2022
9. Seminar at Bergische Universität Wuppertal, Wuppertal, June 29th 2022
10. Automated Vehicles for Sustainable Cities, Solar Decathlon Europe, Urban Mobility Challenge, Wuppertal, June 23rd 2022
11. Automated Vehicle Safety Monitoring and Human-Vehicle Communication, INTonomous Virtual Fair, January 31st 2022

12. Introduction à l'automatisation de la conduite, Véhicules autonomes - À deux coins de rue du futur?, Coeur des sciences - UQAM, causerie virtuelle, November 10th 2021
13. Connectivité et transports du futur, moderator, virtual event organized by AQTr, March 31st 2021
14. La transition vers une mobilité faisant place aux navettes autonomes, panel at the Forum Regards croisés : les navettes autonomes au Québec, virtual event organized by Propulsion Québec, September 10th 2020
15. L'aventure des voitures intelligentes, with Renaud Manuguerra-Gagné (Centre Déclic), Salon de l'auto, Montréal, January 22nd 2020
16. Future of Transportation, WSP Transportation Conference, Montréal, January 20th 2020
17. Les données probantes au XXIème siècle, Lunch with Québec chief scientist. The potential of evidence-based studies for municipal decision-making, Montréal, December 17th 2019
18. L'impact de l'automatisation des véhicules sur la signalisation, presentation to the expert table on traffic control devices of AQTr, Montréal, December 12th 2019
19. Le cas d'une nouvelle technologie et de ses répercussions sur la sécurité et les aménagements : les navettes automatisées à l'essai à Candiac et Hochelaga, Colloque AQTr, la mobilité au service de la sécurité, November 14th 2019
20. Approche multidisciplinaire d'étude des navettes automatisées au Québec, 1ères Journées francophones de la sécurité routière, Québec, October 24th 2019
21. Anonymisation de données : le cas MTL Trajet, 2ème Rencontres Francophones Transport Mobilité, Montréal, June 11th 2019
22. L'aventure des voitures intelligentes, with Valérie Borde (Centre Déclic), festival Eureka, Montréal, June 9th 2019
23. Présentation à la consultation publique sur les véhicules autonomes de la ville de Montreal, June 1st 2019
24. Surrogate Measures of Safety, 18 Years On, Hasselt University, Hasselt, May 28th 2019
25. Diagnostic de la sécurité routière par données GPS, Annual workshop of the Québec Road Safety Research Network, Québec, May 23rd 2019
26. Automated Vehicle Monitoring and Human-Vehicle Communication, MobiliT.AI Forum, Montréal, May 16th 2019
27. Automatisation des véhicules : quelles opportunités pour la recherche publique?, CIR-RELT Workshop on Autonomous Vehicles, Montréal, May 15th 2019
28. L'impact de l'automatisation des véhicules sur le transport collectif, presentation to the expert table on public transport of AQTr, Montréal, February 6th 2019
29. L'aventure des voitures intelligentes, with Valérie Borde (Centre Déclic), Salon de l'auto, Montréal, January 19th 2019
30. Introduction à l'intelligence artificielle, Hydro Québec, Montréal, November 29th 2018
31. Véhicules automatisé et flottes partagées, presentation to the expert table on sustainable mobility of AQTr, Montreal, November 29th 2018
32. How do we avoid a future crisis? Parking can't be a transportation afterthought, Parking Workshop, ITS Canada, Montreal, November 27th 2018
33. Peut-on simuler les interactions entre les véhicules automatisés et les usagers vulnérables?, Annual Meeting of Québec Aimsun users 2018, October 18th 2018
34. Les véhicules sans conducteurs, pour demain?, Développement durable pour ingénieur (DDI8100), Polytechnique Montréal, 13 septembre 2018
35. Voiture autonome, sécurité et intelligence artificielle, Les rendez-vous de Polytechnique Montréal, L'avenir nous transporte, Échange sur la mobilité durable, may 31st 2018, Montréal

36. Analysis of Vulnerable Road User Safety Using Video Data : Case Studies in Montreal, Canada, Trafikksikkerhet - nye metoder og ny kunnskap, TOI, Oslo, May 14th 2018
37. Apprentissage automatique des trajectoires des usagers de la route pour la sécurité routière, CIRRELT Conference, May 10th 2018
38. The Driverless Future, Annual McGill CEGSS Conference, May 9th 2018
39. Le recours au véhicule autonome : choix responsable ou inévitable? Comment s'y préparer?, Forum Science et Environnement, May 2nd 2018
40. Les voitures autonomes, Colloque sur la mobilité des aînés, January 25th 2018
41. State-of-Practice of Surrogate Measures of Safety, SIS118 - Stop Waiting for Crashes to Occur : Video Analytics for Road Safety Analysis, ITS World Congress, Montréal, November 2nd 2017
42. Les voitures autonomes : Quel impact sur la mobilité de demain?, Midis-discussions durables, Polytechnique Montréal, October 18th 2017
43. Monitoring Transportation Systems : Everyone Here or A Few Everywhere, Smart City X, Montréal, September 23rd 2017
44. Levels of Automation, Panel Discussion I - Automated Vehicle Technology and Road Safety, CARSP Conference, Toronto, June 18th 2017
45. L'Internet des objets, presentation to the expert table on smart mobility of AQTr, Montréal, June 6th 2017
46. Smart Mobility with Artificial Intelligence, C2MTL, Montréal, May 25th 2017
47. Impacts des aménagements cyclables sur les comportements et la sécurité des cyclistes (with Luis Miranda-Moreno), Annual workshop of the Québec Road Safety Research Network, Québec City, May 18th 2017
48. Applications of artificial intelligence in transportation, annual workshop of the research chair on mobility, Polytechnique Montréal, May 2nd 2017
49. Smart Cities, Mission industrielle : Poly-Monde, Polytechnique Montréal, March 31st 2017
50. How to Evaluate all the Functions of Streets?, invited seminar, University of Connecticut, March 27th 2017
51. Quelles technologies embarquées pour la mesure et le contrôle de la vitesse?, Colloque Facteurs humains, technologies embarquées et numériques : Quel rôle pour les politiques de sécurité routière?, Entretiens Jacques Cartier, Lyon, November 23rd 2016
52. Voitures autonomes et systèmes de transport intelligents : une réalité à laquelle les villes doivent se préparer, Smart City Conference (3rd edition), Les Affaires newspaper, Montréal, October 20th 2016
53. Les technologies pour la sécurité routière de tous les usagers, presentation to the expert table on road safety of AQTr, Montréal, September 8th 2016
54. Quelles technologies embarquées pour la mesure et le contrôle de la vitesse?, Colloque AQTr : Des stratégies gagnantes pour mieux gérer la vitesse, Montréal, May 25th 2016
55. La révolution autonome, Panel sur les technologies et l'avenir de l'automobile, Montréal Science Centre, January 15th 2016
56. Automated Methods for Traffic Data Collection and Surrogate Measures of Safety, IMOB Transportation Research Institute, Hasselt University, March 19th 2015
57. Automated Methods for Traffic Data Collection and Surrogate Measures of Safety, Chair of Traffic Engineering and Control, Technische Universität München, March 11th 2015
58. Video Analysis for Cyclist Safety : Case Studies in Montreal, Canada, Workshop on Bicycle infrastructure design and interplay in traffic, TOI, Oslo, February 26th 2015
59. Automated Road Safety Analysis, Department meeting, Transport and Roads, Lund University, February 23rd 2015

60. Morningside Avenue Traffic Safety Analysis Results, Webinar for the New York City Department of Transportation, February 17th 2015
61. In-vehicle Technologies for Speed Management and Road Safety, Workshop "Car Insurance and Behaviour Management", chaire d'actuariat, Laval University, February 5th 2015
62. Revue des programmes d'assurance télématique au Québec, Table québécoise de sécurité routière, Québec City, October 30th 2014
63. Automated Methods for Surrogate Safety Analysis : Where We Are and Where to Go Next, Keynote speech at the 2014 ICTCT Workshop, University of Applied Science in Karlsruhe, October 16th 2014
64. Why Transportation (Engineering)?, Student Day at the Annual Conference of the Transportation Association of Canada, invited by the Ontario Good Roads Association, September 30th 2014
65. Automated Methods for Surrogate Safety Analysis, Webinar for the District Department of Transportation, August 25th 2014
66. Informations libres : qu'en pensent nos chercheurs?, 13ème journée de la recherche de Polytechnique Montréal, May 29th 2014
67. Automated Road Safety Analysis using Video Data Montreal Students' Chapter - Canadian Transportation Research Forum Conference, April 7th 2014
68. Automated Methods for Surrogate Safety Analysis, Webinar for the New York City Department of Transportation, February 24th 2014
69. Understanding Collision Processes using Video Data, TRB Workshop on Comparison of Surrogate Measures of Safety Extracted from Video Data, January 12th 2014
70. Automated Surrogate Road Safety Analysis, Concordia Institute for Information Systems Engineering (CIISE) Distinguished Seminar Series, November 14th 2013
71. Diagnostic de sécurité routière à l'aide de données vidéo, IFFSTAR-ENTPE Seminar, May 22nd 2013
72. Diagnostic de sécurité routière à l'aide de données vidéo, Institut Pascal Seminar, May 14th 2013
73. Analyse de la sécurité des carrefours giratoires au Québec, 48ème Congrès de l'AQTr, March 25th 2013
74. Member of the panel of the AQTr workshop "Les STI intégrés : enjeux et perspectives", February 7th 2013
75. Open Source Tools for Trajectory Data Analysis, Workshop on Big Data Informatics : Innovations in Mining Structured and Unstructured Information for Mobility Decision-Making, TRB Workshop 124, January 13th 2013
76. Open source tools for trajectory data analysis, ITS Canada Annual Conference, Québec, June 13th 2012
77. A Surrogate Safety Analysis at Protected Freeway Ramps Using Cross-Sectional and Before-After Video Data, ITS Canada Annual Conference, Québec, June 12th 2012
78. The Driverless Revolution, annual workshop of the research chair on mobility, Polytechnique Montréal, May 23rd 2012
79. Analyse proactive de la sécurité routière et traitement d'image, annual workshop of the Network for Research in Road Safety, Laval University, May 22nd 2012
80. Utilisation de la vidéo pour l'analyse automatique des conflits entre usagers de la route, Colloque AQTr : Les technologies en sécurité routière, Montréal, November 29th 2011
81. Using Data Mining Techniques to Understand Collision Processes, Canadian Multidisciplinary Road Safety Conference, Halifax, Nova Scotia, May 9th 2011

82. Collecte de données sur les mouvements et la sécurité des piétons par caméra vidéo, 46ème Congrès de l'AQTr, April 12th 2011
83. ITS for Transportation Data Collection and Road Safety Analysis; Integrated Platform for Transportation Data Analysis, presentation of CIRRELT to Transport Canada, February 11th 2011
84. Investigating collision factors by mining microscopic data of vehicle conflicts and collisions, Transportation Research Board Annual Meeting, Washington, D.C., January 26th 2011
85. Member of the panel of the TRB workshop entitled "Place of Artificial Intelligence and Computation in the Complex World of Transportation", January 23rd 2011
86. Automated Road Safety Analysis using Video Sensors, TRAM & CIRRELT weekly transportation seminar, November 25th 2010
87. Automated Proactive Road Safety Analysis, University of Connecticut, November 1st, 2010
88. Collecte de données sur les mouvements des piétons par caméra vidéo : application à la sécurité routière, seminar of the integrating platform on pedestrian behaviour in its space ("Comportement du Piéton dans son Espace de circulation") (COPIE), July 2nd 2010
89. Méthodes automatiques pour l'analyse proactive de la sécurité routière, 45ème Congrès de l'AQTr, March 30th 2010
90. How Many Ways to Crash, invited presentation in the Session on Developments in Alternative Models for Road Safety, Transportation Research Board Annual Meeting, Washington, D.C., January 13th, 2010
91. Large Scale Automated Analysis of Vehicle Interactions and Collisions, Session on Varied Approaches to Road Safety Assessment, Transportation Research Board Annual Meeting, Washington, D.C., January 12th, 2010
92. A prototype system for truck signal priority using video sensors, 2009 Transportation Association of Canada Annual Meeting, Vancouver, October 19th 2009
93. Truck Signal Priority (with Wook Kang), 2009 ITE Quad Conference, Vancouver, May 2nd 2009
94. Presentations on Road Safety Analysis (with Kareem El-Basyouny and Karim Ismail) and Video-based Transportation Data Collection (with Karim Ismail) at a joint Transportation Symposium of the University of British Columbia and University of Washington, Seattle, April 3rd 2009
95. Surrogate Safety Analysis, Surrogate Measures of Safety Subcommittee (ANB20(3)), Transportation Research Board Annual Meeting, Washington, D.C., January 13th 2009
96. Vision-Based Road Safety Analysis, 2008 Canadian Institute of Transportation Engineers (CITE) Annual Conference, Victoria, April 30th, 2008
97. Vision-based Road Safety Analysis, invited talk at the SFU Vision and Media Lab with professor Greg Mori, Vancouver, September 12th, 2007
98. Automated Road Safety Analysis Based on Video Sensors, Meeting with Christer Hydén and Åse Svensson, UBC, Vancouver, June 28th, 2007
99. Automated Road Safety Analysis Using Video Data, Translink, Vancouver, January 29th, 2007
100. Vehicle Trajectories Clustering with Dynamic Bayesian Networks for Traffic Safety Analysis, ITS Canada Annual Conference, Whistler, June 5th, 2006
101. Automated Road Safety Analysis Using Video Sensors, UBC Laboratory for Computational Intelligence Forum, Vancouver, April 24th, 2006
102. Clustering automatique de trajectoires avec des HMMs; Application à la sécurité du trafic routier, Séminaire Machine Learning ENST, Paris, January 9th, 2006

103. Automated Road Safety Analysis Using Video Sensors, UBC Transportation Seminar, Vancouver, September 15th, 2005
104. Stream-Based Learning through Data Selection in a Road Safety Application, STAIRS 2004, Valencia, June 24th, 2004
105. Coopération entre système d'inférence et système de reconnaissance; Détection de situations dangereuses dans un carrefour à feux, Forum NTIC et Transports sur le Soft Computing & Transports, Paris, June 27th, 2004
106. Apprentissage incrémental par sélection de données dans un flux pour une application de sécurité routière, Conférence Cap 2004, Montpellier, June 14th, 2004
107. Automatic detection of vehicle interactions in a signalized intersection, 16th Workshop of the International Cooperation on Theories and Concepts in Traffic safety, Soesterberg, October 30th, 2003