

## Partner Search

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CIMMI is looking for partners to support an applied research initiative in the field of Intelligent Transportation Systems (ITS) and Artificial Intelligence (AI). These partners may be companies, university research groups or cities or municipalities hoping to benefit from the research results.

The purpose of this document is to provide a brief outline of the proposed project in order to arouse the interest of potential partners. A meeting may subsequently be scheduled to clarify objectives and deliverables.

### Project title

**Mobilis:** Development of an open platform for generating traffic data through video analysis using artificial intelligence (AI).

### Context

In the context of intelligent transport, video analysis plays a key role in optimizing urban mobility management. It uses connected cameras and AI algorithms to monitor traffic in real time, detect anomalies (congestion, accidents), and gather data on vehicle volume and speed. This information enables decision makers to better plan infrastructure, improve road safety, and facilitate traffic flow, thus contributing to the development of smart, sustainable cities.

Video analysis stands out for its ability to provide detailed, contextualized data, such as vehicle classification, detection of abnormal behavior, and identification of pedestrians and cyclists. Unlike GPS and Bluetooth data, which focus primarily on vehicle location and routes, video analysis provides more comprehensive information on road behavior, and offers richer real-time analysis.

However, access to data or AI methods presents many challenges. For example, data confidentiality is a major concern, especially with the collection of personal data such as surveillance videos. In addition, limited access to quality data and its cost can also limit the development of useful applications or research and development.

It is against this backdrop that we propose to develop an open platform for sharing AI models, in order to make data collection tools more accessible. This data can be used for research purposes, but also for the development of management platforms for cities and businesses.

### Project Description

The aim of the collaborative research project is to develop an open platform for generating traffic data from video streams. The platform may include :

- **AI video analysis libraries:** methods (in Python) and trained models for detecting, classifying and tracking vehicles (cars, trucks, motorcycles, etc.), pedestrians and cyclists from video streams. These methods will be able to make use of video streams from surveillance cameras installed along roads, process on premise or on the cloud.
- **Data analysis libraries:** Methods for measuring certain traffic parameters. Among the parameters that can be measured are speed, flow, density, travel time, vehicle type, presence of pedestrians or bicycles, incident detection, traffic conditions, visibility.

- **Web analysis application:** a user-friendly web application for experimenting with different methods (without coding), visualizing and exporting certain measured parameters.
- **Forum:** knowledge-sharing forum. The site will be hosted on Gitlab and available free of charge to all collaborators. Links to open source and commercial software tools related to data processing (simulators, other data sources, etc.) and other data sources.

We are also open to developing other functionalities according to the needs of our partners.



*Examples of object detection, recognition and tracking using AI methods.*

## Financing

CIMMI would like to apply for funding from organizations such as NSERC and MITACS.

Participating partners will benefit from the intellectual property and deliverables generated during the project. Academic partners will also benefit from scholarships for their students.

All partners (except academic partners) will be expected to contribute a cash amount of around 25% to the project, as well as an equivalent contribution in kind (time or resources).

## Project management

CIMMI's mission is to support the innovation initiatives of Quebec and Canadian companies and public institutions by offering innovative solutions in various fields of digital technology. Since its creation in 2008, the CIMMI team has carried out over 600 applied research and technical assistance projects, mainly in partnership with companies, in a variety of sectors ([discover some of our projects](#)).

The research project will be led by Dr. Denis Boulanger, Director of Research at CIMMI. With over 30 years' experience in innovation and applied research, Dr. Boulanger is a recognized expert in the development of digital and imaging systems. He has also spent over 15 years working on intelligent transport projects, having founded and managed his own company in this field before selling it.

He will be supported by a team of 23 research professionals, specialized in image analysis, artificial intelligence, 3D modeling, cloud architecture and web and mobile application development.