Why Transportation (Engineering)?
Transportation Association of Canada Conference

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Mix of introduction to transportation, personal perspective and advice under the angle of intelligent transportation systems (ITS)
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- systems in which information and communication technologies are applied in the field of road transport, including **infrastructure**, **vehicles** and **users**, and in traffic management and mobility management, as well as for interfaces with **other modes** of transport (Wikipedia)
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- what is intelligent in ITS?
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Multidisciplinary by nature

- mechanical/civil/computer/electrical engineers, economists, doctors, psychologists, sociologists, urban planners, etc.
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ITS is even more multidisciplinary
Challenges in Transportation

- Complex systems, including human behaviour
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- Environmental impacts: air pollution, greenhouse gases, noise
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- Energy consumption
Challenges in Transportation

- Complex systems, including human behaviour
- Environmental impacts: air pollution, greenhouse gases, noise
- Energy consumption
- Health impacts: road accidents, respiratory diseases, lack of physical activity leading to an obesity epidemic
Some Solutions

- Building more roads?
Some Solutions

▶ Building more roads?
▶ Optimize the existing infrastructure
Some Solutions

- Building more roads?
- Optimize the existing infrastructure
- Manage demand, e.g. through real time pricing
Some Solutions

- Building more roads?
- Optimize the existing infrastructure
- Manage demand, e.g. through real time pricing
- Collect better data and provide real time information
Current Research: Video Analysis and Road Safety

Videos
Current Research: Probe Vehicle Data Collection

(MTQ project led by Prof. Catherine Morency)
Game Changers
Game Changers or Not?
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Game Changers or Not?

(source)
Autonomous Cars Will Make Us Safer

By Daniel Bartz  November 16, 2009 | 8:00 am | Categories Cool Cars
Game Changers or Not?

(source)
Unprecedented Time of Opportunities

- Internet is the great enabler
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  - the “sharing economy”
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- New models of organization: open source software, open data, open science
- “Program or be programmed”
- Make things, participate in hackathons, find your closest hackerspace/fablab