Francesco Deflorio - Curriculum vitae

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Associate Professor in Transportation Engineering

Politecnico di Torino – DIATI
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Academic career

Assistant Professor on Transport Engineering at Department DIATI (ex DITIC) - Politecnico di Torino (2006-2018)

Scientific **research grant** on Transport Engineering – Department DITIC - Politecnico di Torino, 2005 – 2006.

Scientific **research grant** on Transport Engineering – Department DITIC - Politecnico di Torino, 2001 – 2004

Ph.D. in "Automatic and Information Science for Transportation"
POLITECNICO DI TORINO
February 2001 - Title of the PhD thesis "A decentralized and feedback strategy for Dynamic Route Guidance systems in road networks"

Master of Science in Civil Engineering - Transport Area
POLITECNICO DI BARI
April 1997 - Thesis in "Transport Planning"

Teaching experience

Since 2001 teaching activities, including lessons and tutorials, in the following subjects:
- Models and Technologies in Traffic and Transport
- Road Traffic Engineering
- Models for the Management of Mobility and Traffic
- Transportation Planning
- Transportation Techniques and Economics
- Transport Systems Design
- Transport systems and outdoor logistics

Main research interests

Traffic Micro-simulation Analysis

- road traffic impact of ADAS solutions
- charge-while-driving system in urban arterial roads
- road pricing strategies in urban areas
- urban traffic control systems on arterial and roundabouts
- interaction between parking and traffic
- toll collection systems
- dynamic route guidance strategies.
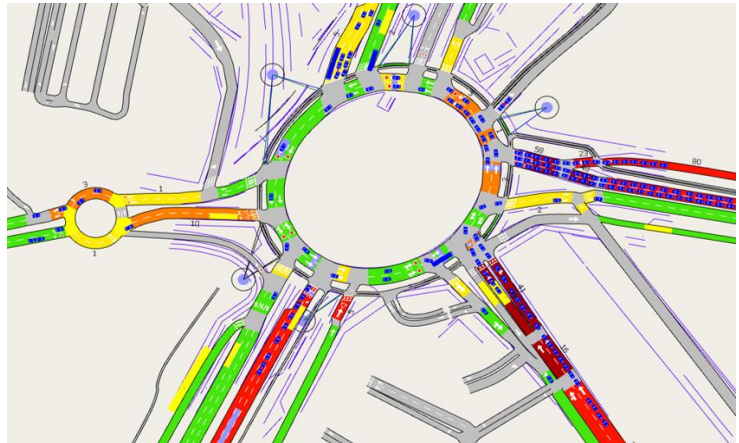
Transport Network Modeling and Assignment

- mapping traffic management systems data into detailed navigation networks
- road and rail transport between Italy and France, interaction between urban and interurban areas
- dynamic route guidance strategies
- network resilience analysis for public transport and road networks).
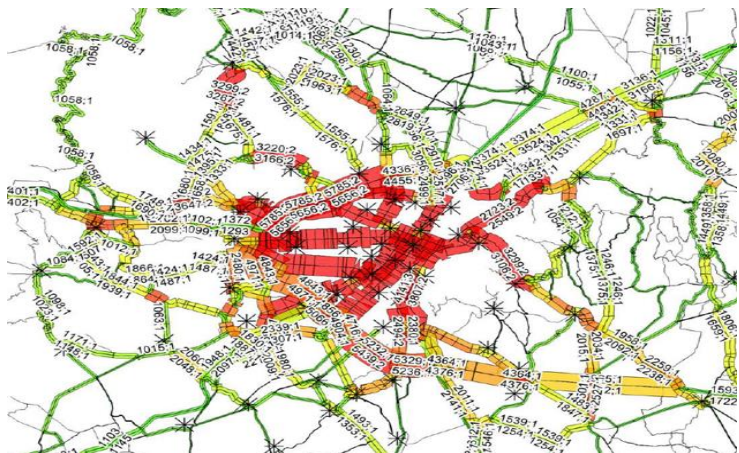
Transport Demand Modeling

- simulation of a combined transport service for evaluating its attractiveness with respect to the traditional road travel mode.
- vehicle trips analysis for modeling user behavior towards electric mobility
- generation of travel requests for *Demand Responsive Transport System*s (DRTS) on the network (during the day) on the basis of socio-economic factors
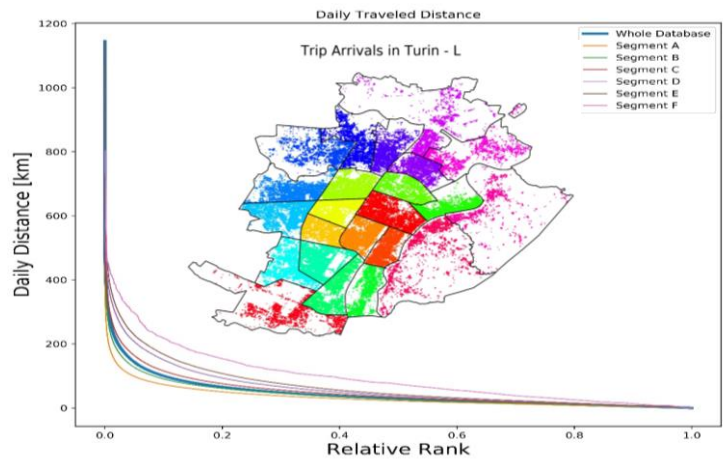
Intelligent Transport Systems (ITS) and road safety

- *traffic observation with automatic data collection (cameras, wi-fi and Bluetooth sensors)*
- *impact assessment on traffic and safety of ADAS solutions and Automated Vehicles*

Main research projects

- INCIT-EV (H2020 project) - Large demonstratIoN of user CentrIc urban and long-range charging solutions to boosT an engaging deployment of Electric Vehicles in Europe

- Simulation & Algorithms for connected extended Vehicles - SAVE project (FCA / CARS)

- Simulation with a microscopic approach of a complex road intersection in Turin (Comune di Torino)

- Investigation on safety effects of ADAS solutions in passenger cars by using EDR and accident data (ACI)

- EU Vehicles for Innovative and interconnected road transport Compliant with EU aims from Energy, emissions, economics and mobility viewpoints (E-VINCE)

- eCo-FEV ("efficient Cooperative infrastructure for Fully Electric Vehicles"), GC-ICT-2011.6.8 - PPP GC, nr. FP7- 314411

- DANGER ("Macro Progetto Applicativo Sicurezza nel Trasporto delle Merci Pericolose"), progetto finanziato dall'Agenzia Spaziale Italiana (ASI, rif. I/039/06/0 - ASI, rif. XT1.203-103-PP-003)

- FRAME-S (FRamework Architecture Made for Europe ¬– support), IST Programme (Information Society Technologies), Call Identifier "Continuous submission" (Accompanying Measure), Key action 1, Action Line: IST-2000-1.5.1, Contract number "IST-2000-29663"

Reviewer of scientific papers for the following Journals and Conferences

- Computers & Operations Research
- Transportation Research Part A
- Transportation Research Part C
- Transportation Research Part E
- Transportation Research Part F
- Simulation Modelling Practice and Theory
- IET - Intelligent Transport Systems
- Ingegneria Ferroviaria (Railway Engineering)
- IEEE Transactions on Vehicular Technology
- International Journal of Sustainable Transportation
- Annals of Management Science
- Advanced concepts, methodologies and technologies for transportation and logistics (Springer Series "Advances in Intelligent Systems and Computing")
- IEEE on ITS; Vienna, Austria
- TRAIL Research School, Delft
- 16th Online World Conference on Soft Computing in Industrial Applications (WSC16) - 2011
- 16th International IEEE Annual Conference on Intelligent Transportation Systems October 6-9, 2013, The Hague
- The 3rd International Conference on Connected Vehicles & Expo (ICCVE 2014) November 3- 7, 2014 | Vienna, Austria
- mobil.TUM 2015 "Technologies, Solutions and Perspectives for Intelligent Transport Systems"
- Transport Research Arena (TRA) Conference 2016, 2020
- International Congress on Transport Infrastructure and Systems (TIS2017) APRIL 10/12, 2017 Rome
- International Congress on Transport Infrastructure and Systems (TIS2019) SEPTEMBER 23/24, 2019 Rome

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Selected publications

Brambilla, M.; Nicoli, M.; Soatti, G. ; Deflorio, F., 2020. Augmenting Vehicle Localization by Cooperative Sensing of the Driving Environment: Insight on Data Association in Urban Traffic Scenarios. In: IEEE TRANSACTIONS ON INTELLIGENT TRANSPORTATION SYSTEMS. - ISSN 1524-9050- 21:4, pp. 1646-1663.

Dalla Chiara, B.; Deflorio, F.; Eid, M., 2018. Analysis of real driving data to explore travelling needs in relation to hybrid–electric vehicle solutions - In: TRANSPORT POLICY. - ISSN 0967-070X.

Bottero, M., Dalla Chiara, B., Deflorio, F.P., 2013. Wireless sensor networks for traffic monitoring in a logistic centre. Transportation Research Part C: Emerging Technologies 26, 99–124.

Dalla Chiara, B., Deflorio, F., Diwan, S., 2009. Assessing the effects of inter-vehicle communication systems on road safety. IET Intelligent Transport Systems 3, 225.

Dalla Chiara, B., Deflorio, F.P., Spione, D., 2008. The rolling road between the Italian and French Alps: modeling the modal split. Transportation Research Part E: Logistics and Transportation Review 44, 1162–1174.

Deflorio, F., Castello, L., 2015a. Traffic modeling of a cooperative charge while driving system in a freight transport scenario. Transportation Research Procedia 6, 325–350.

Deflorio, F., Castello, L., 2015b. Assessing the performance of a charge-while-driving system in urban arterial roads: insight from a microsimulation model. IET Intelligent Transport Systems 9, 505–514.

Deflorio, F., Guglielmi, P., Pinna, I., Castello, L., Marfull, S., 2015. Modeling and Analysis of Wireless "Charge While Driving" Operations for Fully Electric Vehicles. Transportation Research Procedia 5, 161–174.

Deflorio, F.P., 2011. Simulation of requests in demand responsive transport systems. IET intelligent transport systems 5, 159–167.

Deflorio, F.P., 2003. Evaluation of a reactive dynamic route guidance strategy. Transportation Research Part C: Emerging Technologies 11, 375–388.

Deflorio, F.P., Castello, L., Pinna, I., Guglielmi, P., 2015. "Charge while driving" for electric vehicles: road traffic modeling and energy assessment. Journal of Modern Power Systems and Clean Energy 3, 277–288.

Deflorio, F.P., Dalla Chiara, B., Murro, A., SpA, M.A., 2002. Simulation and performance of DRTS in a realistic environment, in: Proceedings of the 13th Mini-Euro Conference Handling Uncertainty in the Analysis of Traffic and Transportation Systems and the 9th Meeting of the Euro Working Group on Transportation Intermodality, Sustainability and Intelligent Transport Systems. pp. 622–628.

Deflorio, F.P., Gonzalez-Feliu, J., Perboli, G., Tadei, R., 2012. The influence of time windows on the costs of urban freight distribution services in city logistics applications. European Journal of Transport and Infrastructure Research 12, 256–274.

Deflorio, F.P., Perboli, G., Tadei, R., 2010. Freight distribution performance indicators for service quality planning in large transportation networks. Flexible services and manufacturing journal 22, 36–60.

Pascale, A., Deflorio, F., Nicoli, M., Dalla Chiara, B., Pedroli, M., 2015. Motorway speed pattern identification from floating vehicle data for freight applications. Transportation Research Part C: Emerging Technologies 51, 104–119.

Pascale, A., Nicoli, M., Deflorio, F., Dalla Chiara, B., Spagnolini, U., 2012. Wireless sensor networks for traffic management and road safety. IET Intelligent Transport Systems 6, 67–77.