Curriculum Vitae

Prof. Davide Giglio, Ph.D.

Associate Professor of Transportation Engineering

University of Genova, Italy

Department of Mechanical, Energy, Management, and Transportation Engineering (DIME)
and Italian Center of Excellence on Logistics Transports and Infrastructures (CIELI)

1 Brief description

Davide Giglio is an Associate Professor of Transportation Engineering at the University of Genova, Italy. He received his Laurea degree in Computer Science Engineering and his Ph.D. in Computer Science and Electronic Engineering in 1997 and 2001, respectively, from the University of Genova. From 2001 to 2016, he worked with the Department of Informatics, Bioengineering, Robotics, and Systems Engineering (DIBRIS) at the University of Genova (formerly the Department of Communications, Computers, and Systems Science, DIST) in the field of systems engineering. Since November 2016, he has been with the Department of Mechanical, Energy, Management, and Transportation Engineering (DIME), where he has been working full-time in the field of transportation engineering. He is also a member of the Italian Center of Excellence on Logistics Transports and Infrastructures (CIELI). His past and current research interests include, but are not limited to: *urban mobility optimization*, *modelling and control of urban traffic networks*, *port management*, *optimization of logistics systems and supply chains*, *logistics of hazardous materials*, *optimization and control of production systems*, *optimal strategies for job scheduling*. He has taught several courses within the Polytechnic School (School of Engineering) across various bachelor's and master's degree programs. He is currently teaching *Planning and Management of Transport Systems* (B.Sc. in Management Engineering) and *Traffic Flow Theory* as well as *Smart and Safe Logistics* (M.Sc. in Safe Transport and Logistics Engineering).

Davide Giglio has participated in numerous national and international research projects in the fields of info-mobility, modelling and optimization of road traffic networks, management of logistic networks, port management, and optimization and control of production systems. In recent years, he has served as Principal Investigator or Scientific Coordinator of several projects, including: *AIRONE* (Intelligent robotic automaton for electric shuttle management), *PLUG-IN* (Platform for urban mobility and processing of heterogeneous traffic information), *MIE* (Intelligent eco-sustainable mobility), *GO-SMART* (Genova Smart Mobility 2.0), *GETUP* (GreEn MaaS for adapTive Urban Planning), *AI.WAY.PORT* (AI forecasting engine for highWAY flows generated by PORT traffic). Since 2022, he has been the Coordinator of Spoke 4, "Smart and Sustainable Ports", within the RAISE (Robotics and AI for Socio-economic Empowerment) innovation ecosystem funded by the Italian Ministry for Universities and Research (MUR) under the National Recovery and Resilience Plan (Mission #4, "Education and research", Component #2, "From research to business"). Davide Giglio is the inventor of the patented *Method for managing the distribution of products or goods* and is the author of more than 100 scientific publications in national and international journals, books, and conference proceedings. His current *h-index* on the Elsevier Scopus database is 16. He has presented his research and organized special sessions at numerous international conferences, including the IEEE Intelligent Transportation Systems Conference, the IEEE Conference on Decision and Control, the IFAC World Congress, the IEEE Conference on Automation Science and Engineering, the IEEE International Conference on Robotics & Automation, and the Workshop on Discrete Event Systems.

2 Education and past positions

- ***Laurea* degree in Computer science engineering** (October 1997) at University of Genova, School of Engineering. *Laurea* thesis: *A modular synthesis technique to automatically build Petri net models of flexible manufacturing systems* (in Italian). Final mark: 110/110.
- **Ph.D. degree in Computer science and electronic engineering** (February 2001) at University of Genova, Department of Communications, Computers, and Systems Science (DIST). Ph.D. thesis: *Modelling and performance-oriented control of manufacturing systems represented by means of Petri nets*.
- **Research Fellow** from March 2001 to May 2010 at University of Genova, Department of Communications, Computers, and Systems Science (DIST). Research activities and projects in the fields of: *urban mobility optimization*, *modelling and control of urban traffic networks*, *optimization of logistics systems and supply chains*, *logistics of hazardous materials*, *optimization and control of production systems*, *optimal strategies for job scheduling*.
- **Assistant Professor of systems engineering** from June 2010 to October 2016 at University of Genova, Department of Informatics, Bioengineering, Robotics and Systems Engineering (DIBRIS).
- **Assistant Professor of transportation engineering** from November 2016 to December 2017 at University of Genova, Department of Mechanical, Energy, Management, and Transportation Engineering (DIME).

3 Current position and academic/institutional roles

- **Associate Professor of transportation engineering** at University of Genova, Department of Mechanical, Energy, Management, and Transportation Engineering (DIME).
- **Head of the master's degree program in Safe Transport and Logistics Engineering** (Polytechnic School – Engineering, University of Genova)
- **Rector's Delegate for the RAISE innovation ecosystem**

4 Research projects

4.1 Main projects with the role of PI / Scientific Coordinator

- **RAISE – Robotics and AI for Socio-economic Empowerment** (2022-2026)
  Spoke 4 – Smart and sustainable ports

  Project funded by: MUR (Italian Ministry for University and Research)
  Cost of the project: 117.194.425,95 € (University of Genova: 22.860.930,16 €)
  Cost of the Spoke 4: 19.329.280,69 € (University of Genova: 8.279.378,08 €)
  Spoke 4's Partners: Aitek, Cetena, Circle Garage, Circle, Italian National Agency for New Technologies, Energy and Sustainable Economic Development (ENEA), Engineering, Fincantieri NexTech, Istituto Italiano di Tecnologia (IIT), Leonardo, National Institute for Nuclear Physics (INFN), National Research Council (CNR), NextFreight, University of Genova.

- **MIE – Intelligent eco-sustainable mobility** (2014-2018)

  Original project name: Mobilità Intelligente Ecosostenibile (in Italian)
  Project funded by: MIUR (Italian Ministry for Education, University and Research)
  Cost of the project: 10.770.150,40 €

Partners: Aitek, BMS Impianti, National Research Council (CNR), Eicas Automazione, Finmeccanica, Hyla Soft, Intecs, Iveco, M.I. Welding Technology, Meridionale Impianti, Negentis, Polytecnic of Milano, Polytecnic of Torino, STMicroelectronics, University of Genova.

- **PLUG-IN – Platform for urban mobility and processing of heterogeneous traffic information** (2013-2016)

  Original project name: Piattaforma per la mobiLità Urbana con Gestione delle INformazioni da sorgenti eterogenee (in Italian)
  Project funded by: MIUR (Italian Ministry for Education, University and Research)
  Cost of the project: 5.708.000,00 €
  Partners: Abirk Italia, Ansaldo STS, Aitek, Cleis Technologies, National Research Council (CNR), Finmeccanica, Fos, Gruppo Sigla, Insis, On AIR, Softeco Sismat, University of Genova.

4.2 Other projects with the role of PI / Scientific Coordinator

- **AI.WAY.PORT – AI forecasting engine for highWAY flows generated by PORT traffic** (2024-2025)

  Project funded by: Regione Liguria (local regional administration)
  Cost of the project: 1.142.970,48 €
  Partners: Aitrust, Exis Engineering Solutions, Leonardo, National Research Council (CNR), On AIR, University of Genova.

- **GETUP – GreEn MaaS for adapTive Urban Planning** (2021-2022)

  Project funded by: Regione Liguria (local regional administration)
  Cost of the project: 1.999.951,01 €
  Partners: AMT, Cleis Security, Exis Engineering Solutions, Flairbit, Iroi, National Research Council (CNR), On AIR, University of Genova.

- **GOSMART – Genova Smart Mobility 2.0** (2018-2020)

  Project funded by: Regione Liguria (local regional administration)
  Cost of the project: 1.715.651,73 €
  Partners: Aitek, Artys, National Research Council (CNR), Softeco Sismat, T Bridge, TeMA, University of Genova.

- **AIRONE – Intelligent robotic automaton for electric shuttle management** (2011-2013)

  Original project name: Automa Intelligente Robotico per Organizzazione Navette Elettriche (in Italian)
  Project funded by: Regione Liguria (local regional administration)
  Cost of the project: 1.500.000,00 €
  Partners: Genova Robot, Softeco Sismat, Sogegross, University of Genova.

- **Optimization and control of handling operations in multi-node logistic systems** (2011-2013)

  Original project name: Ottimizzazione e controllo delle operazioni di movimentazione delle merci in sistemi logistici multi-nodo (in Italian)
  Project funded by: University of Genova
  Cost of the project: 4.000,00 €.

- **Development of discrete-event models and control algorithms for real-time traffic control in urban areas** (2002)

  Original project name: Sviluppo di modelli ad eventi discreti e di procedure di controllo per la regolazione semaforica in tempo reale in ambito urbano (in Italian)

Project funded by: University of Genova
Cost of the project: 3.098,74 €.

4.3 Projects with the role of Participant

- **FLEXI Mobility System – An integrated system for the design and management of flexible mobility services** (2024-2025). *Project funded by:* Regione Liguria (local regional administration).
- **MOBIQUITY – Shared solutions for safe and inclusive mobility** (2024-2025). *Project funded by:* Regione Liguria (local regional administration).
- **Digit-CCAM – Digital Twins for Cooperative Connected and Automated Mobility** (2022-2025). Research Project of National Interest (PRIN). *Project funded by:* MUR (Ministry for University and Research).
- **5GSMARTG – 5G Smart Genova** (2020-2022). *Project funded by:* MISE (Ministry of Economic Development).
- **ARES – Autonomous Robotics for the Extended Ship** (2019-2022). *Project funded by:* MUR (Ministry for University and Research).
- **DocksTheFuture – Towards the Port of Tomorrow** (2018-2020). *Project funded by:* European Union (Horizon 2020 Coordination and Support Action Project).
- **Study for defining the contents of the Sustainable Urban Mobility Plan (SUMP) of Genova Metropolitan Area** (2018-2019). *Project funded by:* Città Metropolitana di Genova (local municipality).
- **ACIS – Advanced Cooperative Infomobility Systems** (2009-2012). *Project funded by:* MIUR (Ministry for Education, University and Research).
- **Decision models for design and management of logistic networks characterized by high interoperability and information integration** (2008-2010). Research Project of National Interest (PRIN). *Project funded by:* MIUR (Ministry for Education, University and Research).
- **Operation planning, optimization and control of Intermode logistic network** (2005-2009). *Project funded by:* Intermode Trasporti Logistica Integrata (Eni Group).
- **CISIUM – Urban mobility platform for integration and supervision of traffic information** (2006-2008). *Project funded by:* Elsag (Finmeccanica Group).
- **Analysis, optimization, and coordination of logistic and production systems** (2006-2007). Research Project of National Interest (PRIN). *Project funded by:* MIUR (Ministry for Education, University and Research).
- **Definition, design and prototypal development of a distributed information system for identification, monitoring and management of road transport of dangerous goods** (2005-2006). *Project funded by:* European Union (Interreg III ALCOTRA Project).
- **Operational planning and management of urban mobility (development of innovative tools for management and control of traffic)** (2001-2003). *Project funded by:* Comune di Genova (local municipality).

5 Publications and patents

5.1 Publications (selection)

[1] M. Abbasi, M. T. Bilal, A. Consilvio, D. Giglio, N. Sacco, and P. Lopez-Arevalo, "On minimizing the impact on traffic of maintenance work zones in a highway network," *Transportation Engineering*, vol. 21, 2025.

[2] S. Anis, M. Farrokhpour, and D. Giglio, "A mathematical model for re-balancing bike-sharing system bikes using public transportation fleet," *Transportation Engineering*, vol. 22, 2025.

[3] F. Gallo, D. Giglio, and N. Sacco, "Joint coordination and routing of autonomous vehicles in road networks with machine learning-based travel time forecasting," *Transportation Research Interdisciplinary Perspectives*, vol. 34, 2025.

[4] F. Gallo, A. Miagostovich, D. Giglio, A. Di Febbraro, and N. Sacco, "Optimal scheduling and motion planning of automated vehicles at intersections," *EURO Journal on Transportation and Logistics*, vol. 14, 2025.

[5] D. Giglio, V. Palma, and A. Tei, "Evaluating the operational and economic impact of the introduction of s-100 and e-navigation within shipping companies," *Case Studies on Transport Policy*, vol. 19, 2025.

[6] V. Palma, D. Giglio, and A. Tei, "Investigating the influence of e-navigation and s-100 over the computation of the weather route," *WMU Journal of Maritime Affairs*, vol. 23, no. 3, pp. 457–475, 2024.

[7] M. T. Bilal and D. Giglio, "Analysing inequity in land use and transportation models by genetic algorithm for realistically quantified penetration rate of advanced driving system equipped vehicles," *Transportation Research Interdisciplinary Perspectives*, vol. 20, 2023.

[8] A. Roshani, M. Paolucci, D. Giglio, and F. Tonelli, "A hybrid adaptive variable neighbourhood search approach for multi-sided assembly line balancing problem to minimise the cycle time," *International Journal of Production Research*, vol. 59, no. 12, pp. 3696–3721, 2021.

[9] A. Di Febbraro, F. Gallo, D. Giglio, and N. Sacco, "Traffic management system for smart road networks reserved for self-driving cars," *IET Intelligent Transport Systems*, vol. 14, no. 9, pp. 1013–1024, 2020.

[10] A. Roshani and D. Giglio, "Simulated annealing algorithms for the multi-manned assembly line balancing problem: Minimising cycle time," *International Journal of Production Research*, vol. 55, no. 10, pp. 2731–2751, 2017.

[11] A. Di Febbraro, D. Giglio, and N. Sacco, "A deterministic and stochastic petri net model for traffic-responsive signaling control in urban areas," *IEEE Transactions on Intelligent Transportation Systems*, vol. 17, no. 2, pp. 510–524, 2016.

[12] D. Giglio, "Optimal control strategies for single-machine family scheduling with sequence-dependent batch setup and controllable processing times," *Journal of Scheduling*, vol. 18, no. 5, pp. 525–543, 2015.

[13] D. Giglio, R. Minciardi, S. Sacone, and S. Siri, "On optimizing production nodes in supply chain systems," *Lecture Notes in Economics and Mathematical Systems*, vol. 619, pp. 149–174, 2009.

[14] M. Aicardi, D. Giglio, and R. Minciardi, "Optimal strategies for multiclass job scheduling on a single machine with controllable processing times," *IEEE Transactions on Automatic Control*, vol. 53, no. 2, pp. 479–495, 2008.

[15] A. Di Febbraro, D. Giglio, and N. Sacco, "Urban traffic control structure based on hybrid petri nets," *IEEE Transactions on Intelligent Transportation Systems*, vol. 5, no. 4, pp. 224–237, 2004.

5.2 Patents

[1] M. Benza, C. Bersani, D. Giglio, and R. Sacile, "Metodo per la gestione della distribuzione di prodotti o merci," Patent IT1393917, May 2012.

6 Teaching

6.1 Bachelor's degree and Master's degree courses

- *Planning and management of transport systems* – Bachelor's degree in Management Engineering (since academic year 2020/21)
- *Traffic flow theory* – Master's degree in Safe Transport and Logistics Engineering (since academic year 2025/26)
- *Simulation of transport and logistic systems* – Master's degree in Safe Transport and Logistics Engineering (since academic year 2026/27)
- *Smart logistics and automated transport systems / Smart and safe logistics* – Master's degree in Safety Engineering for Transport, Logistics, and Production (since academic year 2016/17 up to 2025/26)
- *Safe and reliable transport systems* – Master's degree in Safety Engineering for Transport, Logistics, and Production (since academic year 2017/18 up to 2023/24)
- *Methods and tools for industrial automation* – Master's degree in Computer Science Engineering (from academic year 2014/15 up to 2016/17)
- *Models and methods for automation* – Bachelor's degree in Industrial and Management Engineering (from academic year 2011/12 up to 2016/17)
- *Models and methods for optimization and control* – Master's degree in Management Engineering (academic years 2012/13 and 2013/14)

6.2 Ph.D.-level activities

- Member of the teaching board of Ph.D. course in Marine sciences and technologies (since 35th cycle)
- Member of the teaching board of Ph.D. course in Logistics and transportation (34th cycle)
- Member of the teaching board of Ph.D. course in Engineering of models, machine and systems for energy, environment and transport (33rd cycle)
- Member of the teaching board of Ph.D. course in Systems engineering (29th cycle)
- Member of the teaching board of Ph.D. course in Monitoring of systems and environmental risks management (28th cycle)
- Advisor/Supervisor of several Ph.D. students

Updated on February 12th, 2026.