



Alessio Daniele Marra

*PhD Student at Institute for transport
planning and systems, ETH Zurich*

MSc in Computer Science Engineering

Date of birth: October 20, 1993

Nationality: Italian

Email: alessio.marra@ivt.baug.ethz.ch

[LinkedIn](#)

[Scholar](#)

[ETH Zurich](#)

Current research topics:

- Analyze public transport passenger behavior from GPS data and different data sources
- Pattern identification in public transport operations data with focus on disruptions

Research interests:

- Analytics in public transport operations; machine learning; operation research; tracking

Education

PhD | *Swiss Federal Institute of Technology (ETH), Zurich, Switzerland, institute for transport planning and systems*

From Dec 2017, ongoing

Thesis: Analyzing public transport disruptions and user behavior through tracking technologies

Supervisor: Prof. Francesco Corman

MSc in Computer Science Engineering | *Università degli studi Roma Tre*

From Oct 2015 to Oct 2017

Final grade: 110/110 summa cum laude

GPA: 29.5/30

Thesis: Recognition of user's characteristics using visual features through Machine Learning techniques

BSc in Computer Science Engineering | *Università degli studi Roma Tre*

From Sep 2012 to Oct 2015

Final grade: 110/110 summa cum laude

GPA: 29.75/30

Thesis: Optimization of passengers' flow in railway traffic

Exchange Internship | *Delft University of Technology*

From Jun 2015 to Aug 2015

Research internship on optimization of passenger flow in railways. Developing and comparison of optimization algorithms and heuristics in order to minimize the impact of a general delay situation.

Teaching Experience

- Teaching assistant for the course "Interdisciplinary Project Work" for the MSc in Spatial Development and Infrastructure Systems (fall 2018, fall 2019).
- "Learning to Teach" certificate, ETH Zurich (2019).
- Supervision of students' MSc, BSc thesis & projects.

Skills & Abilities

Methods

- Advanced: machine learning (supervised, unsupervised, neural network), mathematical programming (linear, integer), complex network
- Intermediate: artificial intelligence, big data, concurrent programming, software architecture, choice models

Tools

- Advanced: Python, Java, SKlearn, Cplex, SQL, R, MS Office
- Intermediate: C++, C#, Scala, Mathematica, Prolog, Ocaml, mapReduce, Giraph, d3js, Docker

Languages

- Italian mother tongue
- English fluent
- German basic

Other

Referee

- Conferences: hEART 2019 - Symposium of the European Association for Research in Transportation

List of Publications

Journal Papers

- Marra Alessio D., Becker Henrik, Axhausen Kay W. and Corman Francesco. 2019. Developing a passive GPS tracking system to study long-term travel behavior. *Transportation Research Part C, Emerging Technologies* 104C: 348-368. IF: 4.557
- Corman Francesco, D'Ariano Andrea, Marra Alessio D., Pacciarelli Dario and Samà Marcella. 2017. Integrating train scheduling and delay management in real-time railway traffic control. *Transportation Research Part E, Logistics and Transportation Review* 105: 213-239. IF: 4.093

Conference Papers

- Marra, Alessio D. and Corman Francesco. 2019. From delay to disruption: the impact of service degradation on public transport network. Paper to present at the 8th Symposium of the European Association for Research in Transportation (hEART 2019)
- Marra, Alessio D. and Corman Francesco. 2019. Analyzing the impact of different degrees of disruptions in multimodal public transport. Paper presented at the 19th Swiss Transport Research Conference (STRC 2019), Ascona, 15-17 May 2019.
- Marra Alessio D., Becker Henrik, Axhausen Kay W. and Corman Francesco. 2018. Passive tracking of passengers to analyse public transport mobility in case of disturbances. Paper presented at the Conference on Advanced Systems in Public Transport and TransitData (CASPT 2018), Brisbane, Australia, July 23-25, 2018.
- Marra Alessio D., Becker Henrik, Axhausen Kay W. and Corman Francesco. 2018. Multimodal passive tracking of passengers to analyse public transport use. Paper presented at the 18th Swiss Transport Research Conference (STRC 2018), Ascona, Switzerland, May 16-18, 2018.

Seminars & Talks

- Passive tracking of passengers to analyse public transport mobility in case of disturbances, ETH Zurich, IVV/IVT Seminar (2018)