



**Fabio Lamanna**

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# Summary



Born in 1977, I received the Master Science Degree in **Civil Engineering** (2004) and Ph.D. in **Infrastructure, Structure and Transportation Engineering** (2008) at University of Trieste, Italy, introducing a “complex network approach” framework to analyse urban transportation networks taking into account the scheduling of their own urban transit systems.

After my Ph.D degree I started working as freelance consultant at Public Administrations and private companies on complex tasks about mobility planning and as freelance researcher on the application and extension of complex networks theories on transportation systems.

I've been keeping on several research activities on my own, introducing results about railway timetable analyses in International Conferences about Transportation Engineering (*ISTS 2006, INSTR 2007, RAILROME 2011*) and Complex Networks (*ECCS 2013, ECCS 2014, CCS 2016*).

I've worked for two years at **IFISC** in Palma de Mallorca, Spain, as a post-doc researcher on data analysis, modeling of urban mobility through social networks language identification and land use patterns.

My working activities are primarily related to: assessment of road design of commercial and productive activities; urban planning, modeling, simulation and analysis of transportation networks by means of self-developed tools and through commercial software such as **PTV VISUM**, **PTV VISSIM**, **OmniTRANS**, **OpenTrack**. I support **(Big) Data** collection, analysis and visualization to support companies and public administrations.

# Current Positions

03/2017 —>

## **Consultant**

Data Science, Network Analysis, Mobility

### **LARUS Business Automation s.r.l., Venice, Italy**

I'm currently supporting the enthusiastic team at LARUS, helping discovering data patterns through network analysis and graph databases technologies. Support in Neo4j training classes and bootcamps, data mining on real case scenarios (Technical University of Denmark).

04/2008 —>

## **Consultant**

Transportation Networks, Traffic Science, Urban Planning

### **Innaxis Foundation and Research Institute, Madrid, Spain**

ComplexWorld Panel member for the evaluation of projects related to **Big Data** analysis in ATM industry and research.

### **Institute for Transport Studies Within the European Economic Integration (ISTIEE), Trieste, Italy**

Assessment of the accessibility of harbors within the road network in the Trieste area (Italy). Capacity analysis of highway ramps in terms of the evaluation of the thresholds of capacity of the terminals.

### **Carena Impresa di Costruzioni S.p.A., Miramar S.p.A, Immobiliare Trieste, Trieste, Italy**

Consulting activities on road capacity analysis, additional flows induced by commercial areas. Assessment and design of road junctions within the influence areas of the traffic hotspots.

### **S.V.P. Park San Giusto, Trieste, Italy**

Traffic flow counts and models over the area around the Car Park San Giusto, in the Trieste area, Italy.

### **Studio Novarin, Udine, Italy**

Development of Origin/Destination matrices through car plate count and automatic aggregation of data in the Muggia (Trieste, Italy) area.

### **Luca Mascherin, Udine, Italy**

Consulting activities on road capacity, urban masterplans and commercial activities (Macerata, Spilimbergo, Azzano X, Pordenone - Italy) through **OmniTRANS** software. Consulting activities within the **TrIM** project of the Friuli-Venezia Giulia, Veneto (Italy) and Kaernten (Austria) areas on the **MITRIS** database of road accidents.

# Other Working Experiences

11/2014 - 11/2016

## **Post-Doctoral Research Associate**

Urban Mobility, Data Analysis, Complex Networks

### **Instituto de Física Interdisciplinar y Sistemas Complejos, IFISC, Palma de Mallorca, Spain**

I've worked within the **INSIGHT** (Innovative Policy Modeling and Governance Tools for Sustainable Post-Crisis Urban Development) and **EUNOIA** (Evolutive User-centric Networks fOr Intraurban Accessibility) projects funded under the ICT Theme of the European Union's Seventh Framework Program. INSIGHT aims to investigate how ICT, with particular focus on data science and complexity theory, can help European cities formulate and evaluate policies to stimulate a balanced economic recovery and a sustainable urban development. My activity run over: data analysis, modeling of urban mobility through social networks data and land use patterns; language Identification of social media data streams; social media analyses of residents and visitors mobility patterns in cities.

02/2009 - 10/2014

## **Consultant**

Complex Mobility Tasks, Traffic Assessment and Simulation of Urban Traffic and Mobility

### **Municipality of Trieste, Traffic and Mobility Division, Trieste, Italy**

Urban planning, modeling, simulation and analysis of transportation networks through commercial software such as **PTV VISUM** and **PTV VISSIM**. Development of pollution and acoustic emissions models due to urban traffic. Design, calibration and validation of meso-, macro- and microscopic models of urban networks and road intersections. Environmental analyses on the sustainability of urban projects. Analyses and design of signalized intersections. Analysis and design of urban transit systems.

01/2013 - 02/2013

## **Consultant**

Multi-Criteria Decision Analysis Software Review and Application on Transportation Projects Decision Making

### **Dept. of Architecture and Civil Engineering, University of Trieste, Italy**

Analysis and development of Multi-Criteria decision models related to transportation networks within *D-Sight*, *1000Minds*, *SuperDecisions*, *MacBeth* and *Visual Promethee* softwares and frameworks. Applications and evaluations of some real test cases scenarios of Transportation Projects (Torino railway lines extensions proposals) through *AHP/ANP* and *D-Sight* methods.

06/2010 - 07/2010

## **Lecturer**

PTV VISUM v. 10 Software

Basic and Advanced Courses c/o ITALFERR, Roma, Italy

### **Liftlab s.r.l., Trieste, Italy**

BASIC COURSE (2 days): software introduction, net importer, database structure, graphical parameters, assignment procedures, O/D matrices. ADVANCED COURSE (1 day): demand models and mode choice models. Transit and Private transport matrices. Introduction of Logit and Nested Logit models within the software. Utility functions.

2008 - 2014

### **Developer**

HTML and CSS

**IEFLUIDS s.r.l. Trieste, Italy | Studio Energetica, Udine, Italy | Marzi & Sterni, Trieste, Italy | Studio Pini, Cagliari, Italy**

Development of graphical layouts and of HTML and CSS code of websites. Code optimization processes (thought W3C methodologies). Search Engines Optimization (SEO) Processes.

## Education

2008 | **Ph.D in Infrastructure, Structure and Transportation Engineering**, University of Trieste, Italy | Thesis: [Time-related Analysis of Small World and Scale-Free Transportation Network](#)

2004 | Master Science Degree in **Civil Engineering**, University of Trieste, Italy | Thesis: [Timetabling the New Merano - Malles Venosta Railway Line, Bolzano, Italy](#)

## IT-Skills

**Programming:** python (+ pandas, numpy, scipy, matplotlib), html, css, Latex.

**Database:** Neo4j Certified Professional

**Commercial Software:** PTV Visum, PTV Vissim, OpenTrack, OmniTRANS.

[stackoverflow](#) | python, pandas, dataframes

[GitHub](#) | complex networks, data analysis

## Research Activities

### **Publications:**

Lamanna F, Lenormand M, Salas-Olmedo MH, Romanillos G, Gonçalves B & Ramasco JJ (2016) [Immigrant community integration in world cities](#) arXiv preprint arXiv:1609.03375.

Lamanna F., *Le reti di trasporto Small World e Scale-free: analisi e strategie di difesa*, Metodi e Modelli per l'Ingegneria dei Trasporti nelle Scuole di Dottorato, SIDT Giovani 2008, Padova University Press. ISBN 978-88-903541-4-4.

Lamanna F., Longo G., *Connectivity and vulnerability of the air network in the south-eastern Europe: a complex network approach*, Journal of Transport and Shipping, Issue 4, December 2007. ISSN 1109 - 9347.

## **Conference Proceedings and Contributions:**

*The streets all looked so strange: looking up digital imprints of immigrants' spatial integration in cities*

CCS 16 Conference

Amsterdam, September 2016.

*Estimating Railway Travel Demand Through Social Media Geo-localised Data*

UrbanNet16 Satellite @ CCS 16 Conference

Amsterdam, September 2016.

*Digital Imprints of International Communities in World Cities*

1st International Conference on Geographies of Migration and Mobility

Loughborough, July 2016.

*Strangers' Tweets in Strange Lands*

Data Driven Approach to Networks and Languages @ ENS

Lyon, May 2016.

*Temporal analysis of perturbed railway networks: centralities, periodicity and delay correlations*

Ignite Talk + COMPTRANS Satellite Meeting @ ECCS 14 Conference

Lucca, September 2014.

*Timetable Centrality and Efficiency of Connections in Air-Rail Intermodal Hubs*

ComplexWorld Workshop 3: "Air Transport Network: an Integrated View", @ ECCS 13 Conference

Barcelona, September 2013.

*Robustness and Protection Strategies of Station Tracks Layout. A new Approach Based on Complex Networks Theories*

4th International Seminar on Railway Operations Modeling and Analysis (RAILROME)

Roma, February 2011.

*A Methodology to Estimate Port Capacity as a Function of Road Network Constraints*

Proc. of the 7th SoNorA University Think Tank Conference (Vol. 6), ISSN 1868-8411.

Trieste, February 2011.

*Small World Properties of a Perturbed Railway Timetable*

INSTR07 Symposium on Transportation Network Reliability

The Hague, July 2007.

*Perturbed Timetable Structure Analysis and Railway Circulation Quality: a Test Case*

Proc. of the ISTS 06 Symposium on Transport Simulation @ EPFL

Lausanne, September 2006.

*LOS Analysis and Timetable Structural Indices of Perturbed Railway Circulation*

Proc. of the ICTS 06 Conference on Traffic Science

Portoroz, December 2006.

## **Other Selected Experiences**

2018 | Talk - "Unveiling Academic Collaboration Patterns Through Graph Databases"

@ "The Modeling of Doubt" conference, Mainz, Germany

2017 | Attendance - "Crossroads in Complex Systems"  
@ IFISC, Palma de Mallorca, Spain

2017 | Attendance - "GRAPHCONNECT London"  
@ London, UK

2017 | Attendance - "Workshop on Cloud Services for Synchronization and Sharing"  
@ WCW Congress Centre, Amsterdam, The Netherlands

2016 | Talk - "Don't Forget the Songs That Made You Smile" a presentation on using the [setlist.fm](https://setlist.fm) API and discussion on some case studies  
@ PyData Mallorca, Palma de Mallorca, Spain

2010 | Attendance - "Python for Programmers" and "Python for Scientists and Engineers"  
@ Python Academy, Leipzig, Germany

2008 | Attendance - "Analisi di Modelli Paradigmatici nelle Scienze Sociali"  
@ Politecnico di Milano, Italy

2007 | Attendance - "Analysis and Control of Complex Networks"  
@ Politecnico di Milano, Italy

2005 | Attendance - "**OpenTrack** User Conference and Workshop"  
@ ETH Zurich, Switzerland