

# Marco De Nadai

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CONTACT INFORMATION	E-mail: <a href="mailto:me@marcodena.it">me@marcodena.it</a> GitHub: <a href="https://github.com/denadai2">https://github.com/denadai2</a> Website: <a href="http://www.marcodena.it">http://www.marcodena.it</a> LinkedIn: <a href="http://nl.linkedin.com/in/marcodenadai">http://nl.linkedin.com/in/marcodenadai</a>
ABOUT ME	My research interests focus on Machine Learning and Computer Vision, particularly to the possibilities where Machine Learning can be applied to understand human behaviour. During my PhD, I studied how multi-modal data can be used to describe people's activities in cities. I built predictive models fusing census information, geographical data, satellite, and Google Street View imagery to describe the city, and large-scale GPS locations or mobile phone data to describe people behaviour.
ACTUAL POSITION	<b>Research Scientist</b> <i>Fondazione Bruno Kessler (FBK)</i> , Italy Computer vision generative models (i.e. GANs) for urban aerial and street view imagery.
EDUCATION	<b>PhD in Computer Science</b> , cum laude 2019 <i>University of Trento</i> , Italy Thesis: Into the City: a Multi-Disciplinary Investigation into Urban Life Advisors: <a href="#">Bruno Lepri</a> and <a href="#">Nicu Sebe</a>  <b>Master of Science in Computer Science</b> , 110/110 cum laude 2015 <i>University of Trento</i> , Italy  <b>Exchange student in Artificial Intelligence</b> 2014 <i>Vrije Universiteit Amsterdam</i> , The Netherlands  <b>Bachelor of Science in Computer Science</b> , 100/110 2012 <i>University of Udine</i> , Italy
WORK EXPERIENCE	<b>Research scientist intern</b> 2018 <i>Vodafone</i> , London (UK) Developed a data-driven model for understanding and predicting the use of Android mobile applications and the mobility of people. Mined terabytes of logs and GPS locations. Apache Spark ETL. Advisors: <a href="#">Nuria Oliver</a> and <a href="#">Angelo Cardoso</a>  <b>Visiting student - Research</b> 2016 <i>Massachusetts Institute of Technology (MIT)</i> , Massachusetts, USA Developed a model to predict and describe crime from geographical, mobile phone and census data. Advisor: <a href="#">Marta C. Gonzalez</a>  <b>Data scientist</b> 2015 <i>Fondazione Bruno Kessler</i> , Italy Responsible for designing and developing models to predict human behaviour from multiple sources of data. Mining large scale data from mobile phone logs. Deep learning models for images processing.  <b>Data scientist intern - Research</b> 2014 – 2015 <i>Telecom Italia</i> , Italy Mining of large-scale data from mobile phone call logs to describe the mobility of people in cities.  <b>Machine Learning intern</b> 2014 <i>University of Amsterdam</i> , The Netherlands Developed a Neural Network and ARIMA models to predict the energy consumption of buildings.
PUBLICATIONS	M. De Nadai and B. Lepri. The economic value of neighborhoods: Predicting real estate prices from the urban environment. In <i>IEEE Conference on Data Science and Advanced Analytics (DSAA)</i> , 2018  M. De Nadai, R. Vieriu, G. Zen, S. Dragicevic, N. Naik, M. Caraviello, C. A. Hidalgo, N. Sebe, and B. Lepri. Are safer looking neighborhoods more lively? a multimodal investigation into urban life. In <i>ACM International Conference on Multimedia (MM)</i> , 2016

M. De Nadai, J. Staiano, R. Larcher, N. Sebe, D. Quercia, and B. Lepri. The death and life of great italian cities: A mobile phone data perspective. In *The World Wide Web Conference (WWW)*, 2016

S. Centellegher, M. De Nadai, M. Caraviello, C. Leonardi, M. Vescovi, Y. Ramadian, N. Oliver, F. Pianesi, A. Pentland, F. Antonelli, and B. Lepri. The mobile territorial lab: A multilayered and dynamic view on parents' daily lives. *EPJ Data Science*, 2016

G. Barlacchi, M. De Nadai, R. Larcher, A. Casella, C. Chitic, G. Torrisi, F. Antonelli, A. Vespignani, A. Pentland, and B. Lepri. A multi-source dataset of urban life in the city of milan and the province of trentino. *Nature Scientific data*, 2015

M. De Nadai and M. van Someren. Short-term anomaly detection in gas consumption through arima and artificial neural network forecast. In *IEEE EESMS*, 2015

SCHOLARSHIPS AND AWARDS	<b>Microsoft Azure Research Award.</b> €20,000.00 of Azure credits for my research.	2017
	<b>1st Place.</b> Italian Football Federation Match Analysis competition; prize of €5,000.00.	2017
	<b>Travel Grant.</b> Computational Social Science Summer school.	2017
	<b>Travel Grant.</b> ACM grant for the Multimedia 2016 conference.	2016
	<b>Travel Grant.</b> Google grant for the WWW 2016 conference.	2016
	<b>Best Master's student.</b> University of Trento.	2016

OTHER ACTIVITIES	<b>PC member.</b> ACM MM 2019 · ICDCS 2018 · DAPS 2017.	
	<b>Reviewer.</b> KDD · Ubicomp · Plos one · EPJ Data Science · DAMI · JOSIS · GeoJournal.	
	<b>Summer schools.</b> Computational Social Science Summer school, <i>Sant'Antioco, Italy</i> · Complex networks: theory, methods, and applications, <i>Como, Italy</i>	

PHD AND INDUSTRIAL PROJECTS	<b>Generative Adversarial Networks (GANs) for urban spaces</b>	2019
	<i>Ongoing work</i> Designed and implemented a GAN model to propose <i>what</i> and <i>where</i> the neighbourhood might be modified to make it successful. From an aerial image (e.g. satellite or map image) the model proposes the best locations to add the Point of Interests, conditionally to the existing layout of the district.	

	<b>Modelling the application usage and mobility of hundreds thousands of people</b>	2019
	<i>Paper under review</i> Developed of the application usage and mobility of people through the analysis of the mobile application usage data and GPS locations of 400,000 individuals over six months. Pre-print paper: <a href="https://bit.ly/2ICWEBE">https://bit.ly/2ICWEBE</a>	

	<b>Prediction of people's activity and real estate prices</b>	2018
	<i>Cerved Group, Italy</i> Developed a predictive model, deployed in multiple cities, that predicts the average presence of people and housing prices from OpenStreetMap data and Google Street view imagery.	

	<b>Data fusion of GIS, mobile phone, and census to predict crime</b>	2017
	<i>Paper under review</i> Developed a MCMC Bayesian regression model to explore and predict geo-located crime from the socio-economic, spatial and mobility characteristics of the neighbourhoods in five different cities.	

SKILLS	<b>ML &amp; AI.</b> Machine Learning · Deep Learning · Computer Vision · Data Mining	
	<b>Programming.</b> Python · Java · C · SQL (especially PostgreSQL) · PHP · Javascript	
	<b>Frameworks.</b> NumPy · Scikit-learn · Pandas · PyTorch · Apache Spark · PostGIS · Stan · PyMC	
	<b>Certifications.</b> Scalable Machine Learning with Apache Spark · DeepLearning.ai course	
	<b>OS &amp; Tools.</b> Linux · Bash · Git	

LANGUAGES	<i>English.</i> C1 level	
	<i>Italian.</i> native	