Marco De Nadai

Contact Information

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Actual Position

Ph.D. student in Computer Science
Fondazione Bruno Kessler - Università degli Studi di Trento, Italy
Data mining to describe and predict how objective and subjective characteristics of the city influence the behavior of people. To do so, I fuse multi-modal data to join geographical data, census information, Google Street view images, and anonymized mobile phone data.
Advisors: Dr. Bruno Lepri and Prof. Nicu Sebe
Expected Ph.D.: April 2019

Research Affiliate
Data-Pop Alliance, New York (USA)

Education

Master's degree in computer science, 110L/110, summa cum laude — 2015
Università degli Studi di Trento, Italy

Exchange Master's student — 2014
Vrije Universiteit Amsterdam, The Netherlands

Bachelor's degree in computer science, 100/110 — 2012
Università degli Studi di Udine, Italy

Research Experience

Research scientist intern — 2018
Vodafone, London (UK)
Analysis and modelization of the applications usage and GPS mobility in two countries.

Visiting student research — 2016
Massachusetts Institute of Technology (MIT), Massachusetts (USA)
Spatial networks, social studies, urban planning, mobile phone data.

Data scientist — 2015
Fondazione Bruno Kessler, Italy
Research assistant on city science from mobile phone data.

Data scientist intern — 2014 – 2015
Telecom Italia, Italy
Predictive model on socio-economic indexes and *hotspots* from mobile phone data.

Machine Learning intern — 2014
University of Amsterdam, The Netherlands
Artificial Neural Network predictive model and anomalies detection in building energy consumption.

Publications

M. De Nadai and B. Lepri. **The economic value of neighborhoods: Predicting real estate prices from the urban environment**. *DSAA '18*, 2018

M. De Nadai, R. Vieriu, G. Zen, S. Dragicevic, N. Naik, M. Caraviello, C. A. Hidalgo, N. Sebe, and L. Bruno. **Are Safer Looking Neighborhoods More Lively? A Multimodal Investigation into Urban Life**. In *MM '16*, pages 1127–1135. ACM, 2016b. doi:10.1145/2964284.2964312

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 *WWW '16*, pages 413–423, 2016a. doi:10.1145/2872427.2883084

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*, 5(3), 2016. doi:10.1140/epjds/s13688-016-0064-6

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**. *Scientific data*, 2015. doi:10.1038/sdata.2015.55

M. De Nadai and M. van Someren. **Short-term anomaly detection in gas consumption through ARIMA and Artificial Neural Network forecast**. In *EESMS '15*, pages 250–255. IEEE, 2015. doi:10.1109/EESMS.2015.7175886

Scholarships and awards

Microsoft Azure Research Award 2017
€ 20,000.00 to accelerate my research with Azure cloud computing credits.

Italian Football Federation Match Analysis competition 2017
€ 5,000.00 for a project analyzing the football matches with NLP techniques.

Computational Social Science Summer school scholarship 2017
Travel grant and free accommodation for my participation to the school.

ACM Multimedia 2016 student travel grant 2016
€ 750.00 to support my personal attendance at the conference.

Google travel grant for WWW 2016 2016
$ 625.00 to support my personal attendance at the conference.

Best Master's student 2016
University of Trento.

Summer Schools

Computational Social Science Summer school, *Sant'Antioco (CA), Italy.* 2017

Complex networks: theory, methods, and applications, *Como, Italy.* 2016

Other activities

Reviewer *Plos one, Ubicomp, EPJ Data Science, DAMI, JOSIS, GeoJournal.*

Program committee member *ICDCS 2018, DAPS 2017.*

Ph.D. Projects

Data fusion: GIS, mobile phone, census and crime data
Ongoing work 2017
We use a MCMC Bayesian regression model to explore how geo-located crime data is related with the socio-economic, spatial and mobility characteristics of the neighborhoods of four cities in the world.

From Google Street View images to presence of people
Published in ACM Multimedia 2016 2016
We explore the connection between presence of people and the perception of security in neighborhoods. To predict presence of people we combine mobile phone data with scores of perceived safety, estimated by a Convolutional Neural Network trained on Google Street View images.
Slides: http://goo.gl/M1ZZWu

From Geographical and census data to presence of people
Published in WWW 2016 2016
We *operationalized* an urban planning theory to model the connection between urban environment extracted from GIS data, and presence of people extracted from mobile phone data.
Slides: http://goo.gl/382thc

Background

Certifications: Scalable Machine Learning with Apache Spark, DeepLearning.ai course
Advanced knowledge: Python, PHP, Javascript, HTML5, CSS3, SQL, QGIS, PostGIS
Medium knowledge: C, C++, Java, PyTorch

Languages

English: good (B2 level)
Italian: native