MATTIA CAMPANA

Computer Scientist . Researcher . Developer

ABOUT ME

I am Mattia Campana, I was born on 7th April 1987 in Milano (Italy). I received a Ph.D. in Computer Engineering at the University of Pisa in collaboration with the Institute for Informatics and Telematics of the National Research Council of Italy (IIT-CNR).

Currently, I am a Postdoc Researcher at IIT-CNR. My research activity is related to two main topics: (i) automatic recognition of the user's context, based on the sensing capabilities of mobile devices; and (ii) Context-aware Recommender Systems to optimize the data dissemination and content discovery in the edge of the Internet.

CONTACTS

🌐 mattiacampana.github.io

✉️ campana.mattia@gmail.com

📞 +39 339 3457653

in mattiacampana

S campana.mattia

○ mattiacampana

EDUCATION

UNIVERSITY OF PISA & IIT-CNR, 2019
Ph.D. in Computer Engineering at the University of Pisa (Italy), in collaboration with the Institute for Informatics and Telematics of the National Research Council of Italy (IIT-CNR). The title of my thesis is *"Context-Aware Recommender Systems for Opportunistic Environments"* (english only).

UNIVERSITY OF MILAN, 2015
Master Degree in Computer Science. Title of the thesis: "*Context reasoning algorithms for mobile devices"* (Italian only).

UNIVERSITY OF MILAN, 2011
Bachelor Degree in Computer Science. Title of the thesis: "*Security analysis of the Android operating system"*. (Italian only).

WORK EXPERIENCES

RESEARCHER, 2015 - NOW
I am a member of the Ubiquitous Internet Research group of the Institute for Informatics and Telematics of the National Research Council of Italy (IIT-CNR).

TUTOR, MAR - APR 2018
I have tutored 35 high-school students involved in a training period at IIT-CNR, giving them an introduction about both Android development and mobile sensors Data Analysis **[ref]**.

FREELANCE MOBILE DEVELOPER, 2013 - 2016
Android and iOS Developer.

MICROSOFT .NET DEVELOPER, 2007 - 2008
Sidoti & Tartaglia S.r.l., Segrate, Milano (Italy)

INTERNSHIPS & SUMMER SCHOOLS

STUDENT VISITOR, HONG KONG, JUN-AUG 2018
During the summer of 2018 I was visiting the System and Media Laboratory at the Hong Kong University of Science and Technology (Hong Kong) to work with Dr. Dimitris Chatzopoulos and Prof. Pan Hui, Nokia Chair in Data Science and Professor of Computer Science at the University of Helsinki **[ref]**.

SUMMER SCHOOL, BOZEN-BOLZANO, AUG 2017
I attended the ACM SIGCHI Summer School on Recommender Systems organized and hosted by the Faculty of Computer Science of the Free University of Bozen-Bolzano (Italy) **[ref]**.

RESEARCH PROJECTS

Since 2015 I am involved in the following research projects **[ref]**:

- **INTESA Project** (Tuscany Region)
- **GAMEBUS** (EU Project)
- **SocializeMe** (IIT-CNR)
- **CAPP** (Registro.it)

RESEARCH INTERESTS

OPPORTUNISTIC NETWORKS

Self-forming networks for the edge of the Internet and mobile devices.

MACHINE LEARNING AND RECOMMENDER SYSTEMS

Context recognition based on smartphone sensors and user's preferences modelling to provide personalized services to the user.

MOBILE SOCIAL NETWORKS

Modelling the user social relationships to optimize data the dissemination among mobile devices.

TECHNICAL SKILLS

Programming Languages

Java	● ● ● ● ●
Python	● ● ● ● ○
Objective-C	● ● ● ● ○

Databases

MySQL	● ● ● ● ○
PostgreSQL	● ● ● ● ○
PostGIS	● ● ● ● ○
MongoDB	● ● ● ○ ○

Data Science Frameworks/Tools

Pandas	● ● ● ● ○
Numpy	● ● ● ● ○
SciPy	● ● ● ● ○
Jupyter	● ● ● ● ○
R	● ● ○ ○ ○

Machine Learning Frameworks

Scikit-Learn	● ● ● ● ○
Keras	● ● ● ○ ○

Developing Frameworks/Tools

Jersey	● ● ● ● ○
Flask	● ● ● ○ ○
Apache Maven	● ● ● ○ ○
Git	● ● ● ● ○
Android Studio	● ● ● ● ○
Xcode	● ● ● ● ○

ACADEMIC SERVICES

Technical Program Committee member of PerCrowd 2019 **[ref]**

Reviewer for:

- IFIP Networking 2018 (Conference) **[ref]**
- Online Social Network and Media (Journal, Elsevier) **[ref]**
- Symmetry (Journal, MDPI)
- Journal of Ambient Intelligence and Humanized Computing (Journal, Springer)

Publicity Chair of IFIP IoP-W 2016 **[ref]**

PUBLICATIONS

INTERNATIONAL SCIENTIFIC JOURNALS

M. Campana, F. Delmastro. **COMPASS: Unsupervised and Online Clustering of Human Complex Activities from Smartphone Sensors**. Expert Systems with Applications, Elsevier, 2020 [Under review]

M. Campana, F. Delmastro. **ContextLabeler Dataset: physical and virtual sensors data collected from smartphones usage in-the-wild**. Data in brief, Elsevier, 2020 [Under review]

M. Campana, F. Delmastro. **Recommender Systems for Online and Mobile Social Networks: A survey**. Online Social Networks and Media, Elsevier, 2017

V. Arnaboldi, M. Campana, F. Delmastro, **A personalized recommender system for pervasive social networks**. Pervasive and Mobile Computing, Elsevier, 2017

INTERNATIONAL SCIENTIFIC CONFERENCES

M. Campana, D. Chatzopoulos, F. Delmastro, P. Hui, **Lightweight Modeling of User Context Combining Physical and Virtual Sensor Data**. ACM UbiComp/ISWC'18 Adjunct, 2018, Singapore.

V. Arnaboldi, M. Campana, F. Delmastro, **Context-Aware Configuration and Management of WiFi Direct Groups for Real Opportunistic Networks.** IEEE MASS 2017, Orlando, Florida, USA.

M. Campana, F. Delmastro, R. Bruno, **A machine-learned ranking algorithm for dynamic and personalised car pooling services.** IEEE ITSC 2017, Rio de Janeiro, Brazil.

V. Arnaboldi, M. Campana, F. Delmastro, **PLIERS: a popularity-based recommender system for content dissemination in online social networks.** ACM SAC 2016, Pisa, Italy.

PROJECTS

ContextKit, 2018 - NOW **[ref]**

ContextKit is a mobile framework that provides context-aware features to mobile devices and third-party applications. It is composed of a sensing layer that tracks a broad set of heterogeneous sensors to model different aspects of the user context in the mobile environment, including her mobility patterns, preferences, habits, and social interactions with other people. I am currently working on the extension of ContextKit that includes a reasoning layer that implements different machine learning models (both supervised and unsupervised) to recognize the user's context, based on the data collected by the sensing layer.

PROFESSIONAL SKILLS

- Data collection
- Data Analysis
- Algorithms definition
- Experiments design
- Fast prototyping
- Writing both technical reports and scientific papers
- Work Presentation

LANGUAGE SKILLS

Italian	Native
English	C1 [ref] [ref]

GoTogether, 2016 [ref]

A car pooling application in which users can offer their own car to share specific trips or search for rides and become passengers. The app provides recommendations tailored to the user's profile, her preferences, needs and her behavior while using the application. It has been originally designed for users of the research area of CNR in Pisa in the framework of SMART AREA project.

Developed components: RESTful web-service, and Android application

HughMe App, 2016

A dating application developed for HugMe LLC company.

Developed components: RESTful web-service, iOS and Android applications.

Woof, 2013 [ref]

A social network especially designed for dogs lovers.

Developed components: RESTful web-service, iOS and Android applications.