

# Fabio Moretti

RESEARCHER AND DEVELOPER

24.09.1983 · Via Tolmino 19, Viterbo (VT), Italy.

☎ (+39) 3287750225 | ✉ fabiomor@gmail.com | 📱 fabio-moretti-b9bb412b | 📞 fabio.8383

## Skills

<b>Programming Languages</b>	Java EE, Java for Android, C/C++
<b>Scripting</b>	PHP, HTML5, CSS3, Javascript, LaTeX, Bootstrap, R, MATLAB
<b>Framework</b>	QT, OpenCV, AngularJS, NodeJS, Express, Maven, Junit
<b>IDE</b>	Eclipse, Netbeans, Android Studio, Visual Studio, RStudio
<b>Database</b>	MySQL, MongoDB
<b>Operative Systems</b>	Windows, Mac OSX, Ubuntu, Android

## Experience

### Staff Research Scientist

Roma, Italy

ENEA

12.2018 - Present

- Scientific manager of PELL Project (Public Energy Living Lab)
- Technical manager of RECON Project (Renewable Energy Community ecONomic simulator)
- PhD Supervisor

### Software Engineer

Viterbo, Italy

TERRASYSTEM

03.2017 - 11.2018

- Gis based Android applications
- IT Project Delivery Management

### Software Developer

Milan, Italy

CONTENT INTERFACE ITALIA

09.2016 - 02.2017

- Test suite development of Ncube digital signage solution
- Android Watchdog implementation for background processes of Ncube Player App
- Feature enhancement of Ncube CMS

### IT Analyst

Milan, Italy

IBM CLIENT INNOVATION CENTER

12.2015 - 08.2016

- Data Center Virtualization (VMWare vServer, vClient, ESXi)
- Process automation (IBM Process Designer)
- CAMSS-oriented (Cloud Analytics Mobile Security and Social) activities

### Data Analyst & Backend Developer

Rome, Italy

ENEA

01.2013 - 12.2015

- Development of a Java platform for data acquisition and support for business intelligence processes.
- Development of algorithms for diagnostics and optimization of energetic behavior of Smart Buildings.
- Development of statistical and neural networks models for estimation of buildings consumption.
- Responsible of task assignment and supervision to interns and graduating students
- Involved in several italian research projects concerning Smart Cities activities (Ricerca di sistema elettrico, Res Novae, City 2.0)

### Researcher

Rome, Italy

ENEA

06.2010 - 11.2012

- Development of a C/C++ software for image analysis, motion detection and vehicle detection. Vehicle flow extraction and traffic prediction.
- Development based on QT toolkit of a GUI for parameters tuning.

## Education

## Ph.D. in Computer Science

UNIVERSITY "ROMA TRE"

Rome, Italy

01.2012-06.2015

- **Title:** *Soft Computing techniques for diagnostics and optimisation of building energetic behavior*
- **Main Subjects:** Data Analytics, multiobjective optimization, pattern recognition, data fusion, forecasting models, building simulations
- Mentoring of bachelors and masters graduates.

## PhD Visiting Student

DTU (DANMARK TEKNISKE UNIVERSITET)

Copenhagen, Denmark

01.2015 - 03.2015

- Implementation of *grey box* models, based on SDE (Stochastic Differential Equations), for thermal consumption estimation of a real building.

## Summer School: Dynamic Calculation Methods for Building Energy Assessment

CIEMAT, DTU, JRC

Almeria, Spain

09.2013

- **Main subjects:** Prediction models (ARX, ARMAX and Grey-box) for buildings energy assessment

## Summer School: Self Awareness in autonomic systems.

EDINBURGH NAPIER UNIVERSITY

Edinburgh, Scotland

06.2012

- **Main Subjects:** Self-organising and self-adaptive systems. Soft and autonomic computing techniques.

## Master's Degree in Computer Science Engineering

UNIVERSITY "ROMA TRE"

Rome, Italy

03.2007 - 12.2009

- **Title:** *Acceleration Method of Multiobjective Optimization Processes with fitness approximation*
- **Main Subjects:** multiobjective optimization, forecasting models
- Thesis developed as trainee in ENEA.
- Final score: 106/110

## Certificates

---

### ITIL Foundation - IT Service Management (Lic. 5719170.20547982)

AXELOS GLOBAL BEST PRACTICE

Rome, Italy

06.2016

- Introduction to ITIL base concepts
- IT Service and Infrastructure Management
- Service Management Processes and Interfaces
- ITIL Processes and their interconnections

### Energy Management Course

ENEA

Rome, Italy

05.2013

- Cost-Profit Analysis (4hrs)
- Electric Consumption Saving Methodologies (4hrs)
- Heat Recovery and Thermal Energy Savings Methodologies (4hrs)
- CHP and energy diagnosis techniques (4hrs)

### Java Advanced Course

HUMANGEST S.P.A.

Rome, Italy

03.2010 - 04.2010

- **Main Subjects:** Database, HTML, XML, JSP, MultiThreading, Swing, Applet, Servlet, JavaScript.
- Total 200 hrs.

### Qualification to practice as computer science engineer

REGISTER OF ENGINEERS

Rome, Italy

06.2011

### Attendance Certificate to ESOL course (English for Speaker of Other Languages)

UNIVERSITY OF SIENA

Siena, Italy

2003

- Pass With Merit.

## Publications

---

- |      |   |                  |
|------|---|------------------|
| 2009 | <b>Riduzione delle richieste di performance tramite l'uso di fitness approximation</b> , F. Moretti, M. De Felice. WIVACE (Workshop Italiano sulla Vita Artificiale e Calcolo Evolutivo). Naples, Italy. (Italian)  | Conference       |
| 2010 | <b>Start-up optimisation of a combined cycle power plant with multiobjective evolutionary algorithms</b> , F. Moretti, I. Bertini, M. De Felice, S. Pizzuti. EvoStar. Istanbul, Turkey.   | Conference       |
| 2011 | <b>Modellazione di consumi elettrici attraverso ensembling di reti neurali</b> , M. Annunziato, F. Moretti, F. Lauro, S. Pizzuti. AICA. Turin, Italy. (Italian)   | Conference       |
| 2011 | <b>Analisi immagini di scene urbane per applicazioni di smart lighting e smart city</b> , M. Annunziato, C. Meloni, F. Moretti, S. Pizzuti, F. Bucci. (Italian)   | Technical Report |
| 2011 | <b>Illuminazione pubblica adattiva: modellistica dei sistemi intelligenti</b> , S. Pizzuti, M. Annunziato, F. Bucci, F. Moretti. (Italian)  | Technical Report |
| 2012 | <b>Sviluppo di una sperimentazione dimostrativa di Smart Village e metodi di progettazione</b> , M. Annunziato, G. Comodi, F. Lauro, C. Meloni, F. Moretti, S. Pizzuti, S. Romano. (Italian)  | Technical Report |
| 2012 | <b>Realizzazione di una piattaforma integrate per il data fusion di segnali provenienti da sistemi sensoriali per applicazioni di Smart City integrate nella rete dell'illuminazione pubblica</b> , L. Sciacicco, S. Panzieri, F. Pascucci, F. Moretti, S. Pizzuti, P. Cicolin, C. Foglietta. (Italian) | Technical Report |
| 2012 | <b>Technical and economical analysis of a Smart Public Lighting model</b> , F. Bucci, M. Annunziato, F. Moretti. EPJ Energy Conference. Maastricht, Netherlands.  | Conference       |
| 2013 | <b>Advanced Street Lighting Control through Neural Network Ensembling</b> , F. Moretti, S. Pizzuti, M. Annunziato, S. Panzieri. Smart Systems Conference, Rome, Italy.  | Conference       |

2013	<b>Urban Traffic Flow Forecasting using Neural-Static Hybrid Modeling</b> , M. Annunziato, F. Moretti, S. Pizzuti. Soft Computing Models in Industrial and Environmental Applications.	Journal
2013	<b>Smart Street Lighting management</b> , S. Pizzuti, M. Annunziato, F. Moretti. Energy Efficiency.	Journal
2013	<b>Sviluppo di algoritmi per la gestione ottimale di edifici: applicazione su un caso pilota.</b> , F. Moretti, S. Panzieri. (Italian)	Technical Report
2014	<b>Indoor lighting fault detection and diagnosis using a data fusion approach</b> , F. Marino, A. Capozzoli, M. Grossoni, F. Lauro, F. Leccese, F. Moretti, S. Panzieri, S. Pizzuti. Energy Quest. Ekaterinburg, Russia.	Conference
2014	<b>Importance of Feature Selection for Recurrent Neural Network Based Forecasting of Building Thermal Comfort</b> , M. Macas, F. Moretti, F. Lauro, S. Pizzuti, M. Annunziato, A. Fonti, A. Giantomassi. Adaptive and Intelligent Systems. Linz, Austria.	Conference
2014	<b>Sensitivity based feature selection for recurrent neural network applied to forecasting of heating gas consumption</b> , M. Macas, F. Moretti, F. Lauro, S. Pizzuti, M. Annunziato, A. Fonti, A. Giantomassi. SOCO. Bilbao, Spain.	Conference
2014	<b>Sviluppo di un sistema di supervisione e controllo BEMS e diagnostica di anomalie su impianti di climatizzazione attraverso algoritmi di data fusion</b> , F. Moretti, S. Panzieri. (Italian)	Technical Report
2015	<b>Urban traffic flow forecasting through statistical and neural network bagging ensemble hybrid modeling</b> , F. Moretti, S. Pizzuti, S. Panzieri, M. Annunziato. Neurocomputing.	Journal
2015	<b>The role of data sample size and dimensionality in neural network based forecasting of building heating related variables</b> , M. Macas, F. Moretti, A. Fonti, A. Giantomassi, G. Comodi, M. Annunziato, S. Pizzuti, A. Capra. Energy and Buildings.	Journal
2020	<b>An iot application for industry 4.0: a new and efficient public lighting management model</b> , Leccisi, M., Leccese, F., Moretti, F., Blaso, L., Brutti, A., Gozo, N. IEEE.	Rivista
2020	<b>Challenges and opportunities of Blockchain technology in the energy sector</b> , M. Botticelli, F. Moretti, S. Pizzuti and S. Romano. 2020 AEIT International Annual Conference (AEIT)	Conferenza
2021	<b>From big data to smart data-centric software architectures for city analytics: the case of the pell smart city platform</b> , Ali, M., Scandurra, P., Moretti, F., Blaso, L., Leccisi, M., Leccese, F. IEEE International Conference on Smart Data Services (SMDS)	Conferenza
2022	<b>ECDP: A big data platform for the smart monitoring of local energy communities</b> , Gagliardelli, L., Zecchini, L., Beneventano, D., Simonini, G., Bergamaschi, S., Orsini, M., Fabio, M. CEUR WORKSHOP PROCEEDINGS	Conferenza
2023	<b>A big data platform exploiting auditable tokenization to promote good practices inside local energy communities. Future Generation Computer Systems</b> , Gagliardelli, L., Zecchini, L., Beneventano, D., Simonini, G., Bergamaschi, S., Orsini, M., Fabio, M. AEIT International Annual Conference (AEIT)	Rivista
2023	<b>Architecting a big data-driven software architecture for smart street lighting</b> , Ali, M., Scandurra, P., Moretti, F., Blaso, L. IEEE 20th International Conference on Software Architecture Companion (ICSA-C)	Conferenza