

# Emanuele Buchicchio

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Todi, (PG), Italy

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## Professional profile

I'm an experienced technology leader and software engineer with a deep-seated passion for innovation and a strong foundation in science and technology. My scientific and professional interests, in addition to software engineering, include machine learning (ML), deep learning (DL), generative AI, large language model (LLM), cloud computing, DevOps, MLOps, cybersecurity, internet of things (IoT), and software quality.

My academic background includes a master's degree in computer engineering (2006), an MBA (2011), and a PhD in Industrial and Information Engineering (2024) focused on characterization of AI-based systems.

I had held both technical and managerial roles in several projects in Italy and abroad spanning diverse industries, including electronics, fashion, concrete production, CRM, and human resource management.

In July 2016, I joined Smartpeg and got into Industrial IoT, AI, and ML projects. Since 2019 I have held the position of Chief Technology Officer (CTO) and now I'm focusing on development software solutions for data driven human resource management and AI-powered software tools. Since 2024, I have been collaborating with Nomos AI on the development of services based on generative AI.

Beyond corporate roles, I enjoy sharing my passion and skills with others. I contribute to the Red Hot Cyber cybersecurity community and serve as an instructor for online learning platforms and training institutions.

## Main Skills

Web application design and development, .Net / .Net Core, C#, Java, JavaEE, Typescript, Angular, Python, Industrial IoT, Embedded Systems, Measurements and data acquisition, machine learning, deep learning, LLM, generative AI, cybersecurity, ISO 27001, Cloud, Microsoft Azure, Google Cloud, Agile software development methods, software quality metrics, quality management systems, GDPR compliance

## Other Languages (Levels: A1/A2: Basic user - B1/B2: Independent user - C1/C2 Proficient user)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	Written production
French	A1	A1	A1	A1	A1
English	C1	C1	B2	B2	B2

## Main Work Experience

### Chief Technology Officer (CTO)

Since July 2016

Smartpeg srl – Perugia (PG) – [www.smartpeg.eu](http://www.smartpeg.eu)

- Analysis, design and development of web applications for private businesses and government bodies.
- Java Enterprise and .Net web application, Spring, .Net MVC, Web Api, Python, SOAP and REST web services, JavaScript, TypeScript, Angular2+, AngularJS. Cloud-based hosting and service (Google Cloud, Microsoft Azure e Amazon AWS).
- Software quality assurance, Web application test automation with Selenium, JMeter, AzureDevOps
- Data analysis with Microsoft PowerBI, R and python
- Industrial monitoring and control application, embedded system, IoT and smart factory solution.
- Team leader in software development teams, GDPR and ISO 27001 compliance.

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## Senior Software Developer

June 2014 - July 2016

Pegaso200 srl – Corciano (PG) – [www.pegaso2000.it](http://www.pegaso2000.it)

- Analysis, design and development of web applications for private businesses and government bodies.
- Web service (REST e SOAP), ASP.NET, Java8, JavaEE, Spring4. Single Page Application javascript, AngularJS, jQuery, jQueryUI, Oracle Database e Microsoft SQL Server.

## Consultant / Software Developer

Feb. 2011- Jun. 2014

Gianos Consulting S.r.l.- Orvieto (TR) – [www.gianos.it](http://www.gianos.it)

- Design and development of web, hybrid and native and mobile application (iOS and Android)
- Implementation of CRM solutions based on Sage SalesLogix.
- Design and development of web applications for PC and smartphones ASP.NET / ASP.NET MVC, HTML5, jQuery, jQueryMobile, ExtJS, SenchaTouch
- Business intelligence and reporting application with Crystal Reports XI e Microsoft Reporting Service

## Product Manager

Oct. 2008 - Jan. 2011

Eles Semiconductor Equipment - Todi (PG) Italy – [www.eles.com](http://www.eles.com) – [info@eles.com](mailto:info@eles.com)

- Life cycle management of software and firmware products: requirements analysis and feasibility study for of new products, definition of roadmap of evolution of existing products,
- Technical and marketing documentation, training on software products and materials for courses

## Software Engineer

Jan. 2007 - Oct. 2008

Eles Semiconductor Equipment - Todi (PG) Italy – [www.eles.com](http://www.eles.com) – [info@eles.com](mailto:info@eles.com)

- Design and development of software products with Microsoft .Net platform, C#, Visual C++
- Definition of development processes based on ISO9000 and CMMI quality management models.

## Other work experience

2003 - 2015

- Since 2024: R&D engineer and technical leader at Nomos AI
- Since 2020: Instructor in online and in person courses (sw development, cloud, IoT, ML, AI, devops)
- 05/2006 - 11/2006: Internship at Eles Semiconductor Equipment. Software R&D Department
- 2004-2010: Freelance Software Professional (WordPress, Joomla, Java, PHP, Home automation, .Net)
- 2000 - 2003: Editor in charge for the Climbing and Canyoning channel on the portal [www.supereva.it](http://www.supereva.it)
- 2000 - 2003: Climbing instructor and canyoning guide for then Umbria Outdoor consortium

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## Education and Training

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### PhD in Industrial and Information Engineering

Nov. 2020 – Apr. 2024

Department of Engineering, University of Perugia (Università degli Studi di Perugia) – <https://ing.unipg.it/dipartimento>

Thesis: UNCERTAINTY AWARE MACHINE LEARNING BASED MEASUREMENT SYSTEMS

Topics: Instrumentation & Measurement, measurement tools and methods based on artificial intelligence, machine learning, computer vision, gesture recognition, battery state of charge estimation, ai based systems characterization.

### Master of Business Administration (MBA). Final grade 110/110

Jun. 2010 - Nov. 2011

(Master universitario di secondo livello in Business Administration. Università degli studi E-Campus)

### MEng Computer Engineering Final grade 110/110 with honors

2004 - 2006

(Laurea Specialistica in Ingegneria Informatica, Università degli Studi di Perugia)

Thesis: DESIGN OF AN INTEGRATED DEVELOPMENT ENVIRONMENT FOR TESTING OF ELECTRONIC DEVICES

### BS information technology engineering. Final grade 109/110

2000 - 2004

(Laurea triennale in Ingegneria dell'informazione, Università degli Studi di Perugia).

Thesis: REALISATION OF A TOOL FOR THE CONTROL OF SOFTWARE QUALITY

### High school degree. Final grade 100/100

1995 - 2000

(diploma di maturità liceo scientifico con sperimentazione PNL, Liceo Statale Jacopone da Todi, Todi (PG)).

## Others Trainings

### Introducing Generative AI with AWS

Jun. 2025 – Aug. 2025

### IPMA Introductory Certificate in Project Management

Oct. 2023 – Dec. 2023

### PhD Winter/summer Schools

2020 -2022

Oxford ML school 2022, PRACE Winter School 2021-Converging HPC Infrastructure & Methodologies; University of Zurich, Department of Informatics IfI Summer School 2021; International PhD School “Italo Gorini 2021; IEEE SPS Summer School 2021 – From Machine Learning to Deep Learning. A Computer Vision Perspective; 2nd IEEE Winter School on Fog/Edge Computing 2020

### Azure Cloud Fundamentals

Sep. 2020 - Oct. 2020

### Machine Learning Engineer with Microsoft Azure Nanodegree, Udacity

Oct. 2020 – Jan. 2021

### AI Product Manager Nanodegree, Udacity

Aug. 2020 - Oct. 2020

### Microsoft Professional Programs for Data Science.

Apr.2017 – May 2019

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## Publications (Updated list on [ORCID profile https://orcid.org/0000-0002-2786-5931](https://orcid.org/0000-0002-2786-5931))

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1. De Angelis, A., Buchicchio, E., Santoni, F., Moschitta, A., & Carbone, P. (2022). Uncertainty characterization of a practical system for broadband measurement of battery EIS. *IEEE Transactions on Instrumentation and Measurement*, 71, 1-9..
2. Rinalduzzi, M., De Angelis, A., Santoni, F., Buchicchio, E., Moschitta, A., Carbone, P., ... & Serpelloni, M. (2021). Gesture recognition of sign language alphabet using a magnetic positioning system. *Applied Sciences*, 11(12), 5594.
3. Buchicchio, E., De Angelis, A., Santoni, F., Carbone, P., Bianconi, F., & Smeraldi, F. (2023). Battery SOC estimation from EIS data based on machine learning and equivalent circuit model. *Energy*, 283, 128461.
4. Buchicchio, E., De Angelis, A., Santoni, F., Carbone, P., Bianconi, F., & Smeraldi, F. (2022). Dataset on broadband electrochemical impedance spectroscopy of Lithium-Ion batteries for different values of the state-of-charge. *Data in Brief*, 45, 108589.
5. Buchicchio, E., De Angelis, A., Santoni, F., Carbone, P., Bianconi, F., & Smeraldi, F. (2022). LiBEIS: A software tool for broadband electrochemical impedance spectroscopy of lithium-ion batteries. *Software Impacts*, 14, 100447.
6. Buchicchio, E., De Angelis, A., Santoni, F., & Carbone, P. (2022). EasyEIS: A software tool to perform electrochemical impedance spectroscopy using a source measure unit. *SoftwareX*, 18, 101075.
7. Buchicchio, E., De Angelis, A., Santoni, F., & Carbone, P. (2023). Uncertainty characterization of a CNN method for Lithium-Ion Batteries state of charge estimation using EIS data. *Measurement*, 220, 113341.
8. Buchicchio, E., Grilli, L., Capobianco, E., Cipriano, S., & Antonini, D. (2022). Invisible supply chain attacks based on trojan source. *Computer*, 55(10), 18-25.
9. Buchicchio, E., Santoni, F., De Angelis, A., Moschitta, A., & Carbone, P. (2021). Gesture recognition of sign language alphabet with a convolutional neural network using a magnetic positioning system. *Acta IMEKO*, 10(4), 97-102.

## Conferences (Updated list on [ORCID profile https://orcid.org/0000-0002-2786-5931](https://orcid.org/0000-0002-2786-5931))

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1. P. Carbone, A. De Angelis, E. Buchicchio, F. Santoni and A. Moschitta, "Time-domain Battery State-of-Charge Estimation based on Domain-Transformation and Linear Discriminant Analysis," 2023 IEEE International Workshop on Metrology for Automotive (MetroAutomotive), Modena, Italy, 2023, pp. 30-34, doi: 10.1109/MetroAutomotive57488.2023.10219107
2. De Angelis, A., Buchicchio, E., Santoni, F., Moschitta, A., & Carbone, P. (2021, July). Practical broadband measurement of battery EIS. In 2021 IEEE International Workshop on Metrology for Automotive (MetroAutomotive) (pp. 25-29). IEEE.
3. Buchicchio, E., Bianconi, F., Smeraldi, F., De Angelis, A., Santoni, F., & Carbone, P. (2022). Battery state of charge estimation using machine learning and electrochemical impedance spectroscopy measurements. In 2022 Elsevier Masurement Sensor Systems and Applications Conference
4. Buchicchio, E., De Angelis A., Santoni F., and Carbone P., "Stima dello stato di carica di una batteria basato su spettrografia elettrochimica di impedenza, gaussian process regression e deep learning," in VI Forum Nazionale Misure 2022, 2022
5. Buchicchio, E., De Angelis A., Santoni F., and Carbone P. "Lithium-ion batteries state of charge estimation based on electrochemical impedance spectroscopy and convolutional neural network," in proceedings 25th IMEKO TC4 International Symposium and 23nd International Workshop on ADC and DAC Modelling and Testing, 2022