

Gianni Tumedei

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- 👤 Birth date: 25/02/1996
Citizenship: Italian



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CURRENT OCCUPATION

PhD student at the University of Bologna, Department of Computer Science and Engineering.
Research topic: Digital Twin and HCI to Augment Smart Environment

Teaching tutor at the University of Bologna, campus of Cesena, for the course of Mobile Systems Programming (Programmazione di Sistemi Mobile) of the first cycle degree in Computer Science and Engineering (Ingegneria e Scienze Informatiche).

WORK EXPERIENCE

November 2023 - Today

University of Bologna

PhD Student

Research topic: Digital Twin and HCI to Augment Smart Environment

Description: This PhD project's goal is to apply HCI techniques to visualize and manipulate data within Digital Twins (DTs), investigating on the effectiveness of classic user interfaces, eXtended Reality (XR), voice commands and more. By focusing on some case studies, mainly about smart environment digital twins, the idea is to find out how the human-DT interface can be designed to positively impact aspects like infrastructure management, awareness and decision-making processes. The end results are going to be generalized into a set of universal guidelines on how to communicate and manipulate DT data across diverse fields.

November - December 2023

Radio Centrale

Web developer

Description: creation of the new Radio Centrale website.

Website: <https://radiocentraleweb.it>

Technologies: Node.js, TypeScript, Astro, Solid.js, Payload CMS, MongoDB.

a.y. 2023/2024

University of Bologna

Teaching Tutor

Subject: Mobile Systems Programming (Programmazione di Sistemi Mobile)

Course: first cycle degree in Computer Science and Engineering (Ingegneria e Scienze Informatiche)

Tasks:

- Hold lectures and laboratory exercises

February – October 2023

University of Bologna

Research Fellow

Project: H2020_SMARTLAGOON

Subject: Designing Digital Twin interfaces and Data Visualization for increasing the stakeholders' awareness in the SMARTLAGOON context

a.y. 2022/2023

University of Bologna

Teaching Tutor

Subject: Web Services and Applications (Applicazioni e Servizi Web)

Course: second cycle degree in Computer Science and Engineering (Ingegneria e Scienze Informatiche)

Tasks:

- Hold lectures
- Support in-laboratory lectures

a.y. 2022/2023

University of Bologna

Teaching Tutor

Subject: Web Systems Engineering (Ingegneria dei Sistemi Web)

Course: first cycle degree in Computer Systems Technologies (Tecnologie dei Sistemi Informatici)

Tasks:

- Hold lectures
- Support in-laboratory lectures
- Correction of exam projects

a.y. 2021/2022

University of Bologna

Teaching Tutor

Subject: Foundations of Web Systems (Fondamenti di Sistemi Web)

Course: first cycle degree in Computer Systems Technologies (Tecnologie dei Sistemi Informatici)

Tasks:

- Support in-laboratory lectures
- Correction of exam projects

October – December 2021

Scientific High School “Augusto Righi”, Cesena (FC)

Computer Science and Technology Teacher

Tasks:

- Substitute teacher in the subject of Computer Science
- Support for foreign students in learning the Italian language and studying Computer Science

May – September 2021

University of Bologna – Navile Project

Contract for research activity

Development, for the new Navile building complex of the University of Bologna, of an intuitive and usable wayfinding platform that provides public kiosk displays with a responsive UI, SVG maps and indications on how to reach campus spaces.

Supervisor: Prof. Catia Prandi

Research team: two researchers of the Computer Science and Engineering department, two research students

Technologies: Node.js, TypeScript, Vue.js, Express, MySQL

2021

Morethantech

Web developer

Creation and maintenance of the Morethantech website.

Website: <https://morethantech.it>

Technologies: Node.js, TypeScript, Vue.js, tRPC, MySQL, Docker.

December 2020 - February 2021

University of Lisbon - Maré Project

Scholarship for research activities

Development of a platform to help students return to normal after Covid-19, by offering a ML predicted value of the number of people inside campus spaces, a feedback system to improve estimates, and an unenforced booking system, all accessible via a mobile application.

Supervisors: Prof. Catia Prandi, Prof. Augusto Esteves

Research team: international team with members from the University of Bologna, University of Minho, University of Porto, ITI / LARSyS, University of Lisbon

Technologies: Dart, Flutter, Google Maps SDK, Firebase

Related publications:

- Ma, S., Nisi, V., Esteves, A., Prandi, C., Nicolau, H., **Tumedei, G.**, Nogueira, J., Boschi, F. and Nunes, N., 2022. Crowdsensing-enabled service design for floating students during the COVID-19 pandemic. In *Congress of the International Association of Societies of Design Research* (pp. 943-959). Springer, Singapore.
- **Tumedei, G.**, Boschi, F., Prandi, C., Gomes, L., Calheno, R., Abreu, R., Ma, S., Nisi, V., Nunes, N. and Esteves, A., 2021, September. Promoting a safe return to university campuses during the COVID-19 pandemic: Crowdsensing room occupancy. In *Proceedings of the Conference on Information Technology for Social Good* (pp. 145-150).

October - November 2019

Tajana, Barlocco, Galluccio & Partners

Web developer

Creation of a new website for the company.

Website: <https://tbgstudio.it>

Technologies: HTML, CSS, JavaScript, Bootstrap, PHP.

April 2018

Infia S.r.l.

Occasional performance

VBA macro programming in Microsoft Excel.

October 2016 – July 2017

Infia S.r.l.

Employment – IT support

Activities and responsibilities:

- Supporting the IT manager
- Troubleshooting, maintenance and system integration and configuration tasks
- Collaboration in the migration project towards ERP and MES systems, with particular regard to data migration
- Collaboration in the project for the installation of an automatic palletizer in one of the company's production departments
- IT assistance to employees
- Employees workstation setup
- VBA macro programming in Microsoft Excel
- Queries on SQL Server Management Studio
- Product label design using ZPL language

February – July 2016

Infia S.r.l.

Internship – IT support

Activities and responsibilities:

- Supporting the IT manager in various troubleshooting, maintenance and system integration and configuration tasks
- IT assistance to employees
- Employees workstation setup
- VBA macro programming in Microsoft Excel
- Queries on SQL Server Management Studio

June – July 2014

Infia S.r.l.

Internship in collaboration with ITT B. Pascal

Activities and responsibilities:

- Supporting the IT manager
- IT assistance to employees
- VBA macro programming in Microsoft Excel
- Queries on SQL Server Management Studio

July 2013, July – August 2012

eSTATE ATTIVI project – ITAS G. Garibaldi Cesena

Volunteering in collaboration with the Municipality of Cesena

Sale of the company's fruit products.

EDUCATION AND QUALIFICATIONS

November 2023 - Today

University of Bologna

PhD Student

Research topic: Digital Twin and HCI to Augment Smart Environment

Description: This PhD project's goal is to apply HCI techniques to visualize and manipulate data within Digital Twins (DTs), investigating on the effectiveness of classic user interfaces, eXtended Reality (XR), voice commands and more. By focusing on some case studies, mainly about smart environment digital twins, the idea is to find out how the human-DT interface can be designed to positively impact aspects like infrastructure management, awareness and decision-making processes. The end results are going to be generalized into a set of universal guidelines on how to communicate and manipulate DT data across diverse fields.

2019 - 2022

Second cycle degree in Computer Science and Engineering

University of Bologna, Campus of Cesena

Grade: 110/110 and honors

Class n.: LM-32 Computer systems engineering

Elaborate details:

Title: Towards a Smart Campus Digital Twin: Promoting Awareness and Sustainability Through Wayfinding and Real-Time Environmental Data

Subjects: Web Services and Applications

Supervisor: Prof. Catia Prandi

Description: Documentation of the AlmaMap Navile project, a system that powers public touch kiosks across the Navile district of the University of Bologna, offering two main features: i) maps and wayfinding to help people in orienting themselves; and ii) real-time environmental data and comfort level about campus spaces, obtained by interfacing with the BIM system installed at the complex. The end result is a first step towards building a smart campus Digital Twin, that can support all the people who are part of the campus life in their daily activities, improving their experience, giving them the ability to make informed decisions, and promoting awareness and sustainability.

URL: <https://amslaurea.unibo.it/27643>

2015 - 2019

First cycle degree in Computer Science and Engineering

University of Bologna, Campus of Cesena

Grade: 100/110

Class n.: L-8 Information technology engineering

Elaborate details:

Title: Il protocollo OPC UA

Supervisor: Prof. Franco Callegati

Subject: Telecommunication Networks

Description: Detailed analysis of the OPC Unified Architecture protocol, an open source and cross platform solution for data exchange in the industrial and IoT fields.

URL: <https://amslaurea.unibo.it/19780>

2010 - 2015

High school graduation in Computer Science and Telecommunications

Istituto Tecnico Tecnologico Statale Blaise Pascal - P.le Macrelli, 100 - 47521 Cesena (FC)

Grade: 100/100

Address subjects:

- Computer technology
- Systems and Networks
- Project Management and Business Organization
- Electronics and Telecommunications
- Systems Technology & Design

2015

First Certificate in English (FCE)

Istituto Tecnico Tecnologico Statale Blaise Pascal - P.le Macrelli, 100 - 47521 Cesena (FC)

Grade: A

Level: C1

Certification body: Cambridge English Language Assessment

2015

Garden in-depth and excellence course

Istituto Tecnico Tecnologico Statale Blaise Pascal - P.le Macrelli, 100 - 47521 Cesena (FC)

Creation of a greenhouse equipped with an online data acquisition and consultation system.

2014

Basic training course for workers

Istituto Tecnico Tecnologico Statale Blaise Pascal - P.le Macrelli, 100 - 47521 Cesena (FC)

Training on:

- Concepts of risk, damage, prevention, protection
- Rights and duties of the various company subjects
- Mechanical, electrical, chemical, carcinogenic, biological risks
- Workplaces, VDTs, work stress
- Signs, emergencies
- Safety and first aid procedures
- Accidents and injuries

2013

Preliminary English Test (PET)

Istituto Tecnico Tecnologico Statale Blaise Pascal - P.le Macrelli, 100 - 47521 Cesena (FC)

Level: B2

Certification body: Cambridge English Language Assessment

2010

Key English Test (KET)

University of Bologna, Campus of Cesena

Level: A2

Certification body: Cambridge English Language Assessment

PUBLICATIONS

2024

Transforming Smart Campuses into User-Centric Environments by integrating BIM and Environmental Data

Gianni Tumedei, Chiara Ceccarini, Catia Prandi

In proceedings of TrustSense 2024: 1st International Workshop on Pervasive Computing Challenges in Trustable Crowdsensing Systems – 2024 IEEE International Conference on Pervasive Computing and Communications (PERCOM 2024).

Workshops and Affiliated Events

2024

Toward a Digital Twin: combining sensing, machine learning, and data visualization for the effective management of a coastal lagoon environment

Giovanni Delnevo, Gianni Tumedei, Vittorio Ghini, Catia Prandi

In proceedings of CCNC 2024: 3rd International workshop on IoT interoperability and the web of things (IIWOT'24).

Track 2 - Networking Solutions for Social Applications, Multimedia, and Games

2024

On developing a procedural level generator based on the Model Synthesis algorithm in the context of serious games

Davide Paolillo, Bryan Corradino, Gianni Tumedei, Mariagrazia Benassi, Catia Prandi

In proceedings of CCNC 2024: 3rd International workshop on IoT interoperability and the web of things (IIWOT'24).

Track 2 - Networking Solutions for Social Applications, Multimedia, and Games

2024

Train your attention and executive functions with Eye-Riders! A videogame for improving cognitive abilities in neurodiverse children

Mariagrazia Benassi, Davide Paolillo, Matilde Spinoso, Sara Giovagnoli, Noemi Mazzoni, Luca Formica, Gianni Tumedei, Catia Prandi

In proceedings of CCNC 2024: 3rd International workshop on IoT interoperability and the web of things (IIWOT'24).

Track 2 - Networking Solutions for Social Applications, Multimedia, and Games

6 October 2023

Evaluating the use of machine learning algorithms in environmental sensing for energy saving

Giovanni Delnevo, Gianni Tumedei, Vittorio Ghini, Catia Prandi

In Proceedings of NET4us '23 (The 2nd Workshop on Networked Sensing Systems for a Sustainable Society, pp 201–206).

<https://doi.org/10.1145/3615991.3616402>

6 September 2023

What Does Air Quality Sound Like? On Exploring the impact of Data Sonification Versus Data Visualization

Chiara Ceccarini, Gianni Tumedei, Gianluca Migliarini, Catia Prandi

In Proceedings of GoodIT'23 (ACM International Conference on Information Technology for Social Good, pp 510–516).

Track: GoodIT'23 - Work-in-Progress Track Papers

<https://doi.org/10.1145/3582515.3609575>

15 December 2022

Towards a Smart Campus Digital Twin: Promoting Awareness and Sustainability Through Wayfinding and Real-Time Environmental Data

Gianni Tumedei, Catia Prandi (supervisor), Augusto Esteves (co-supervisor), Andrea Manzo (co-supervisor)

<https://amslaurea.unibo.it/27643>

06 November 2022

Crowdsensing-enabled Service Design for Floating Students during the COVID-19 Pandemic

Shuhao Ma, Valentina Nisi, Augusto Esteves, Catia Prandi, Hugo Nicolau, Gianni Tumedei, João Nogueira, Francesco Boschi, and Nuno Jardim Nunes

In Congress of the International Association of Societies of Design Research (IASDR 2021, pp 943–959). Springer, Singapore.

https://doi.org/10.1007/978-981-19-4472-7_61

09 September 2021

Promoting a Safe Return to University Campuses during the COVID-19 Pandemic: Crowdsensing Room Occupancy

Gianni Tumedei, Francesco Boschi, Catia Prandi, Luís Gomes, Rui Calheno, Rui Abreu, Shuhao Ma, Valentina Nisi, Nuno Nunes, Augusto Esteves

In Proceedings of the Conference on Information Technology for Social Good (GoodIT 2021, pp 145–150).

<https://doi.org/10.1145/3462203.3475911>

12 December 2019

Il protocollo OPC UA

Gianni Tumedei, Franco Callegati (supervisor)

<https://amslaurea.unibo.it/19780>

AWARDS AND ACKNOWLEDGEMENTS

2021

OSM11 Hackfest – Winner

Team Asterisk Unibo: Onur Ozenir, Gianni Tumedei, Gyordan Caminatti, Luca Salvigni, Mattia Rossi

Exploiting OpenStack, Juju Charms and Asterisk for the implementation and deployment of a Virtual Network Function for VoIP calls.

https://osm.etsi.org/wikipub/index.php/OSM11_Hackfest

2014

IT Olympics - Territorial selection

Istituto Tecnico Tecnologico Statale Blaise Pascal - P.le Macrelli, 100 - 47521 Cesena (FC)

Participation to the territorial selection of the Italian IT Olympics and the related training course.

SCIENTIFIC CONFERENCES

17-21 July 2024

The 22nd European Conference on Computer-Supported Cooperative Work (ECSCW2024)

Web Chair

10-13 July 2022

IEEE International Conference on Distributed Computing Systems (ICDCS 2022)

Volunteer

09-11 September 2021

ACM International Conference on Information Technology for Social Good (GoodIT 2021)

Speaker

Track title: Promoting a Safe Return to University Campuses during the COVID-19 Pandemic: Crowdsensing Room Occupancy

VOLUNTEERING

2018 - Today

AVIS Cesena

Blood donor

SKILLS

Mother language

Italian

Other languages

English

Level: C1

Spanish

Level: A1

Programming skills

Programming languages

- TypeScript
- JavaScript
- Python
- PHP
- Go
- Java
- Scala
- Kotlin
- Swift
- Visual Basic
- Dart
- C
- C++
- C#

Markup languages and other DSLs

- HTML
- CSS
- SCSS
- SQL
- GraphQL
- Markdown
- LaTeX

Technologies and frameworks

- Node.js
- Vue.js
- React
- SolidJS
- Svelte
- Electron
- Spring Boot
- Flutter
- Git
- Docker
- MongoDB

Driving licence

B

Other skills

Amateur football player