

Andrea Giulianelli

Software Engineer

Misano Adriatico, Italy
✉ an.giulianelli@gmail.com
🌐 AndreaGiulianelli
in andrea-giulianelli

Education

- Sep 2021 – Mar 2024 **Master Degree in Computer Science and Engineering**, *University of Bologna*, Cesena, Italy
Thesis: *A Web-based approach for ecosystems of heterogeneous Digital Twins*
Graduation mark: *110/110 cum Laude*
- Sep 2018 – Oct 2021 **Bachelor Degree in Computer Science and Engineering**, *University of Bologna*, Cesena, Italy
Thesis: *Studio e sviluppo prototipale di un middleware per ecosistemi interoperabili di Digital Twins*
Graduation mark: *110/110 cum Laude*
- Sep 2013 – Jul 2018 **High School in Computer Science**, *ISS P. Gobetti - De Gasperi*, Morciano di Romagna, Italy
Final mark: *100/100 cum Laude*

Experience

- Apr 2024 – ongoing **Research Fellow**, *University of Bologna*, Cesena, Italy
- The objective of the research project is the prototype design of an infrastructure and a platform for Digital Twins using as a reference the Web of Digital Twins metamodel and proposals/standards developed in similar contexts, starting from the W3C Web of Things proposal.
 - The research project is part of a PRIN, entitled: "*TWINKLE - digital TWIN continuum: a Key enabler for pervasive cyber-physical Environments*", in collaboration with the University of Modena-Reggio Emilia and the University of Pisa.
 - https://bandi.unibo.it/ricerca/assegni-ricerca?id_bando=67413
- Aug 2023 – Dec 2023 **Research Intern**, *University of St. Gallen*, St. Gallen, Switzerland
- Design of a Web-based approach for creating cross-domain and cross-organizational ecosystems of heterogeneous Digital Twins that use existing technologies to be individually developed and are compatible with popular Web paradigms like Web of Things.
 - The feasibility of the design was proved with a prototypical implementation using different Digital Twin Builders in a Healthcare and Smart City use case scenario.
- Apr 2021 – Jun 2021 **Student Intern**, *University of Bologna*, Cesena, Italy
- Curricular Internship during Bachelor's Degree.
 - Study of the Digital Twin concept and testing of the Microsoft Azure Digital Twins platform.
- Nov 2018 – Dec 2018 **Software Developer**, *Municipality of Morciano*, Morciano di Romagna, Italy
- Participation in the design and development phases of the municipality website and app.

- Apr 2017 – **Software Developer and IT Technician**, *Municipality of Cattolica*, Cattolica, Italy
- May 2017
- Management of computers within the municipality.
 - Participation in creating the streaming infrastructure of the municipal councils.
 - Prototyping of the online booking tool for appointments in the Municipality offices.
- Jul 2016 – **Software Developer**, *Euro Cooling System*, Riccione, Italy
- Sep 2016
- Design and prototypical implementation of an automated nebulization system.
- Apr 2016 – **IT Technician**, *Computer Microbyte*, San Giovanni in Marignano, Italy
- May 2016
- Custom PC assembly.
 - Malware removal and restoration.

Main projects

- 2024 **WWoDT: Web-based Web of Digital Twins**, [*wwodt*]
Prototypical implementation of the master thesis design for web-based ecosystems of heterogeneous Digital Twins that follow the Web of Digital Twins vision.
Programming Languages: *Kotlin, Java, C#*.
- 2024 **Meetby**, [*meetby*]
Meetby is a meeting planning platform.
Stack MEVN.
- 2023 **Smart Operating Block**, [*github-organization*]
A Smart version of an Operating Block.
It abstracts the real world by a Digital Twins layer where an application layer composed of event-driven microservices and a multi-agent system reason and act.
Programming languages: *Kotlin, Java, C++, C#*.
Hardware: *Arduino, Raspberry, and several sensors and actuators*.
- 2023 **HomeRent ontology**, [*homerent-ontology*]
The HomeRent ontology models data on apartment rental posts including apartment details.
RDF, RDFS, OWL, SWRL.
- 2022 **Virus Spread Simulator**, [*virsim*]
Virsim is a Scala-based multi-platform (JVM, JS) simulation tool for the spread of a virus within a population. It is possible to create a simulation configuring different options such as the virus or the map of the environment and then Virsim will simulate the progress of the infections inside it.
Programming language: *Scala*.

Scholarships and Awards

- 2021 **Graduation Award: Premio Focardi**, *Ser.In.Ar.*
Graduation award in memory of Prof. Sergio Focardi.
- 2021 **Merit Scholarship**, *University of Bologna*
Merit Scholarship for grades during the first two years of university.
- 2020 **Merit Scholarship**, *University of Bologna*
Merit Scholarship for grades during the first year of university.
- 2020 **Merit Scholarship**, *Banca Malatestiana*
Merit Scholarship for evaluation in High School Diploma.
- 2018 **Merit Scholarship**, *Banca di Gradara*
Merit Scholarship for evaluation in High School Diploma.

- 2018 **Merit Scholarship, Rotary Club**
Merit Scholarship for evaluation in High School Diploma.
- 2018 **Merit Scholarship, Italy**
Merit Scholarship for evaluation in High School Diploma.
- 2017 **Merit Scholarship, ISS P.Gobetti - De Gasperi**
Scholarship based on merit in the first 4 years of high school.

Skills

Programming Languages	Java, Scala, Kotlin, JavaScript, C#, C++, C, Python, PHP, Prolog
Other Languages	LaTeX, Markdown, HTML, CSS, YAML, JSON, XML, JSON-LD, RDF, OWL, SWRL
Tools	Git, Gradle, Docker, Vue.js, MongoDB, MySQL, Swagger
Paradigms, Patterns, and Practices	OOP, FP, Concurrent & Distributed Programming, Digital Twins, Web of Things, Agents and Multi-Agent Systems, ML, DevOps, Domain-driven Design, Testing-driven Development

Languages

Italian	<i>Native Speaker</i>
English	<i>Confident/Fluent (B2)</i>