

PERSONAL INFORMATION

Andrea Bombarda



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Sex Male | Date of birth 10/04/1994 | Nationality Italian

WORK EXPERIENCE

2011–2013

Scientific Animator

Bergamo Scienza, Bergamo (Italy)

Scientific animator for children of primary and lower secondary school (9-14 years old), in several laboratories, focused on simple software development for the Arduino UNO Board and on the representation RGB of the colors with the PC.

Jun 2012

Intern - Software Developer

Nuovo Istituto Italiano d'Arti Grafiche, Bergamo (Italy)

Jan 2014–Jan 2019

Software Developer - Database Administrator

PLM Impianti Srl, Almè (Italy)

- Development of the company's informative system: customer data management, automatic generation of offers, automatic generation of proforma invoices and other documents, automatic mailing procedures, reporting system (Microsoft Access, VBA, VB.NET)
- Development, management and administration of the company's database (Microsoft SQL Server)
- Development and management of the integration between the informative system and the management software used by the company (Mago.NET)

Sep 2018–Dec 2018

Teaching Assistant - Industrial Automation

Università degli Studi di Bergamo, Bergamo (Italy)

Teaching assistant activities for the "Industrial Automation" course. The taught topics are the following:

- PLC software development using the following languages (IEC 61131): Ladder, SFC and Structured Text
- Petri Nets
- GCode for CNC machines control

1 Feb 2019–1 Oct 2019

University research assistant

Università degli Studi di Bergamo, Bergamo (Italy)

- Specialization in Software Engineering, supervised by Prof. Angelo Gargantini
- Research topics: quality of medical software and systems, use of formal methods to execute verification and validation activities

Jul 2019–Jul 2019

Professor - PLC Programming

Università Degli Studi di Napoli Federico II, Napoli (Italy)

Teaching activities for the "PLC Programming" course. Taught topics are the following:

- Introduction to the Industrial Automation
- Introduction of the main aspects of the PLC Programming
- IEC 61131 norm: Ladder and Structured Text languages

20 Sep 2019–20 Nov 2019

Scientific Animator

Università degli Studi di Bergamo, Bergamo (Italy)

Scientific animator for children of primary school, in lessons focused on the introduction of the basis of the computer science, using the web-platform Code.Org

Oct 2019–Dec 2019

Teaching Assistant

Università degli studi di Bergamo, Bergamo (Italy)

- Instructor of series of 6 practical trainings (2 academic hours each) within the course "Informatics III B", in Academic Year 2019-2020, taught by Prof. Patrizia Scandurra.
- Topics covered: XML, Json, Git, Java GUI (Swing), MVC and design patterns, software static analysis and dynamic analysis, tools for programming in Java, Django.

Oct 2019–Jun 2020

Professor

Fondazione "Istituto Tecnico Superiore per le nuove tecnologie e per il made in Italy", San Paolo D'Argon (Italy)

- Professor of two courses ("Internet of Things" and "Software Architecture") for students of a post-diploma specialization course.

EDUCATION AND TRAINING

Sep 2008–Jul 2013

Secondary school diploma

EQF level 4

ITIS P. Paleocapa, Bergamo (Italy)

"Perito Industriale Capotecnico" diploma obtained in 2013 with final grade 100/100.

Acquired competencies:

- Excellent knowledge of C/C++ and Visual Basic
- Excellent knowledge of the languages HTML/JavaScript/CSS
- Excellent skills in PHP/SQL programming
- Good knowledge of ASP and Ajava
- Good skills in Arduino and PIC programming
- Good skills in the use of the Linux OS (shell commands, script execution and develop)
- Good knowledge of the Assembly language
- Good knowledge of the computer networks and how the work

2011

Attendee to a Problem Solving course

Università Statale di Milano, Crema (Italy)

2012

ECDL (European Computer Driving Licence)

2012

Attendee to "AJAX" and "Robotics" courses

Università degli Studi di Bergamo, Bergamo (Italy)

Sep 2013–Sep 2016

BSc in Computer Engineering

EQF level 6

Università degli Studi di Bergamo, Bergamo (Italy)

- Bachelor's degree in Computer Engineering (Laurea in ingegneria informatica) with final grade

108/110.

- Final dissertation with title “Development of a system for the estimation of the trajectory of a Foucault Pendulum by means of inertial measurements”, supervisor Prof. Fabio Previdi.

Acquired competencies:

- Excellent knowledge of the following languages: C/C++, Java, HTML, JSP, CSS, SQL, JSP, PHP, XML, XPath, XQuery, Cyclone, Assembly and Ajax.
- Excellent knowledge of the programming languages of the IEC 61131 norm: SFC, Ladder and Structured Text.
- Excellent skills in Arduino programming
- Good knowledge of the Matlab environment
- Good knowledge in architectural pattern for software design and of the software lifecycle
- Good skills in the management and design of computer networks

Sep 2016–Dec 2018

MSc in Computer Engineering

EQF level 7

Università degli Studi di Bergamo, Bergamo (Italy)

- Master's degree in Computer Engineering (Laurea Magistrale in ingegneria informatica) with final grade 110/110 cum laude
- Final thesis with title “Design and implementation of the BGenome database for genomic data management”, supervisor Prof. Fabio Previdi

Acquired competencies:

- Good knowledge of robotics (robot control, odometry estimation)
- Excellent knowledge of the main methods to test, verify and validate the software
- Excellent skills in the following languages: C, C++, Scala, Java, HTML, Javascript, Python (also with the framework Django)
- Good knowledge of the basis of Artificial Intelligence and Machine Learning
- Good skills in the design of electronic circuits.
- Excellent knowledge in architectural pattern for software design and of the software lifecycle

Nov 2018–May 2019

Attendee to "HC. Lab"

Università degli Studi di Bergamo, Bergamo (Italy)

Training with respect to entrepreneurship in the Health sector and to the possibilities of innovation in that field

Aug 2019–Sep 2019

Visiting Researcher

EQF level 8

University of Texas at Arlington

Department of Computer Science and Engineering, 76010 Arlington, TX (United States)

- Collaboration on a project regarding test sequences generation with constraint, using Finite State Machine, Abstract State Machine and Regular Expression, to improve the quality of medical software, in the group of Prof. Jeff Lei.

1 Oct 2019–Present

PhD Student in Engineering and Applied Sciences

EQF level 8

Università degli Studi di Bergamo, Bergamo (Italy)

- Specialization in Software Engineering, supervised by Prof. Angelo Gargantini
- Topic of the ongoing thesis is the improving of the quality of medical software, by using rigorous methods.

PERSONAL SKILLS

Mother tongue(s) Italian

Foreign language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	B2	B2	B1	B1	B2
French	A1	A1	A1	A1	A1

Levels: A1 and A2: Basic user - B1 and B2: Independent user - C1 and C2: Proficient user
 Common European Framework of Reference for Languages

Communication skills

- Good communication skills gained through my experience as teacher in university, and as scientific animator.

Organisational / managerial skills

- Good organizational skills
- Team-working (from several projects in teams, done during the University studies)

Digital skills

SELF-ASSESSMENT				
Information processing	Communication	Content creation	Safety	Problem-solving
Proficient user	Proficient user	Proficient user	Proficient user	Proficient user

Digital skills - Self-assessment grid

- Good skills in the use of the tools of the Microsoft Office suite (Word™, Excel™, PowerPoint™, Access™)
- Good skills in graphical applications and video-making (Adobe PhotoShop™, Adobe Lightroom™, Apple Final Cut Pro X);

Driving licence A, B

ADDITIONAL INFORMATION

Publications

- A. Bombarda, S. Bonfanti, and A. Gargantini, **Developing medical devices from Abstract State Machines to embedded systems: a smart Pill Box case study**, in the TOOLS 50+1: Technology of Object-Oriented Languages and Systems (TOOLS 50+1), Innopolis, Russia, October 14-19, 2019
- A. Bombarda, S. Bonfanti, A. Gargantini, M. Radavelli, F. Duan and Y. Lei, **Combining Model Refinement and Test Generation for Conformance Testing of the IEEE PHD Protocol using Abstract State Machines**, in the 31st IFIP International Conference on Testing Software and Systems (IFIP-ICTSS 2019), Paris, France, October 15-17, 2019
- A. Bombarda, A. Gargantini, **An Automata-Based Generation Method for Combinatorial Sequence Testing of Finite State Machines**, in the 9th International Workshop on Combinatorial Testing 2020, Porto, Portugal, March 23, 2020
- P. Arcaini, A. Bombarda, S. Bonfanti, A. Gargantini, **Dealing with Robustness of Convolutional Neural Networks for Image Classification**, in the 2nd IEEE International Conference On Artificial Intelligence Testing, Oxford, United Kingdom, April 13-16, 2020

Conferences

Participations:

- Attendee to the "World Youth Forum 2018" in Sharm el Sheikh (Egypt)

- Attendee to the "NASA Formal Methods 2019" in Houston (USA)
- Attendee to the "TOOLS 50+1 2019" in Innopolis (Russia)

Paper review activity:

- I was a reviewer for the 31st IFIP International Conference on Testing Software and Systems (IFIP-ICTSS 2019).

Projects

- High School thesis: Development of an Arduino-based embedded system for the tracking of GPS data, inertial data and temperature, to be used during the motorbike riding.
- Bachelor thesis: Development of a system for the estimation of the trajectory of a Foucault Pendulum by means of inertial measurements
- Master thesis: Development of the web-application BGenome, able to manage genomical data of the local hospital's patients
- Web-application for Construction sites management: Web application commissioned by the "Carabinieri" police force