Curriculum vitae > Serlonghi Nicola

PERSONAL INFORMATION

Surname and name	Serlonghi Nicola
Date of birth	24/12/1997
Location	Brescia, Italy
Nationality	Italian
E-Mail	nicolaserlonghi@gmail.com
Website	serlonghi.com
LinkedIn	linkedin.com/in/nicola-serlonghi
GitHub	github.com/nicolaserlonghi

SUMMARY

Current job

Software Engineer at ASEM S.R.L. - a Rockwell Automation Company.

Education

Master's degree in Computer Science and Engineering - Embedded System at University of Verona (Italy) in March 2022 with grade of 110/110 Cum Laude.

Latest publication

Exploiting BLE smart tags for virtual coaching, IEEE World Forum on Internet of Things, 2021, New Orleans (USA).

Most relevant project

Uninstall System Apps, an open source Android App available on GitHub with 80k download on Google Play.

Latest coding competition

HashCode 2022 - Online Qualification Round - global ranking #4254.

WORK EXPERIENCE

**January 2022
Present**

Software Engineer

ASEM S.R.L. a Rockwell Automation Company - Verona (Italy)

C++ and TypeScript developer involved in the creation of FactoryTalk Optix: an open, scalable HMI visualization platform with modern technologies, innovative designs and scalable deployment options.

Main activities:
- Development of FTOptix Studio and Web in C++;
- Development of FTOptix Web Runtime in Typescript/ReactJS;
- Design and development of licence management dashboard;
- Porting FTOptix Studio from Windows to Linux (Ubuntu).

(TypeScript, JavaScript, React, C++)

July 2019 December 2020	**Software Engineer** EDALab S.R.L. - Verona (Italy) Full stack developer on several projects, mainly in the web and mobile fields, with the opportunity to learn and experiment with new technologies in several areas. Main activities: • Design and development of several Web App in React, including a Web App to create customised dashboards from a configuration file; • Development of several backends in Java with the Spring Boot framework; • Design of several databases in PostgreSQL; • Design and development of an Android and Wear OS App in Java with SQLite that interacts with embedded devices to collect data; • Maintenance of embedded software in C. *(JavaScript, React, Java, Android Development, Spring Boot, PostgreSQL, C)*
September 2018 July 2019	**Internship: Software Developer** ESD Laboratory - University of Verona, Verona (Italy) Developed a Virtual Coaching system to assist the elderly in daily life activities. Main activities: • Design and development of an Android and Wear OS App in Java to assist the elderly in daily life activities through automatic action recognition; • Development of an algorithm to recognise through BLE Beacons if an action is performed; • Design and development of a backend in Node.js and a Couchbase database. *(Java, Android Development, Node.js, Couchbase)*
August 2018 October 2018	**Waiter, barista and welcoming customers** Oblix Restaurant, The Shard, London (United Kingdom)
May 2018 August 2018	**Internship: Software Developer** ESD Laboratory - University of Verona, Verona (Italy) Full stack development of an Android App, powered by Couchbase, from an existing concept app in Ionic for the Virtual Medical Assistant. *(Java, Android Development, Couchbase)*
July 2017	**Transfer machine loading and unloading operator** Novasfer S.R.L. - Calvagese della Riviera (Italy)
Septembere 2016 February 2017	**Software Developer** Coemar Lighting S.R.L. - Castiglione delle Stiviere (Italy) Development of an embedded software in C for controlling light projectors and DMX512 communication protocol. *(C, DMX512, Embedded Software)*
February 2016	**Internship: Web Developer** Scozzese™ - Desenzano del Garda (Italy) Development of an JavaScript Web App. *(JavaScript, CSS, HTML)*
February 2015	**Internship: App Developer** Group4Business - Rezzato (Italy) Development of an iOS App using Objective-C. *(Objective-C)*

EDUCATION AND TRAINING

October 2019
March 2022

Master's degree in Computer Science and Engineering - Embedded Systems
University of Verona - Verona (Italy)
- Grade: 110/110 Cum Laude;
- Thesis: Virtual coaching for the acquisition of new behaviours via BLE smart tags and wearable devices.

October 2016
July 2019

Bachelor's degree in Computer Science
University of Verona - Verona (Italy)
- Grade: 100/110;
- Thesis: A mobile application for a virtual coaching system assisting the elderly in daily life activities.

September 2012
June 2016

High school degree - Computer Science and Telecommunications
I.I.S ''Luigi Cerebotani'' - Lonato del Garda (Italy)
- Grade: 84/100.

PEER-REVIEWED SCIENTIFIC ARTICLES

2021

Exploiting BLE smart tags for virtual coaching
- Conference: IEEE World Forum on Internet of Things, New Orleans (USA);
- Authors: Demrozi F., Serlonghi N., Turetta C., Pravadelli C. and Pravadelli G.
- Article: ieeexplore.ieee.org/document/9595350.

PERSONAL PROJECTS

March 2021
May 2021

Colosseum Frontend
- An open source frontend, written in React, for the Code Colosseum project: a platform for creating and playing algorithmic multiplayer games;
- Repository: github.com/nicolaserlonghi/colosseum-frontend.

March 2018
September 2019

Uninstall System Apps
- An open source Android App, written in Java, that allows to remove apps from the system through root permissions;
- 80k download on Google Play;
- Repository: github.com/nicolaserlonghi/UninstallSystemApps.

November 2018

Info Brescia
- An Amazon Alexa Skill, written in Node.js, to hear the latest news from the province of Brescia, Italy;
- Website: amazon.it/Nicola-Serlonghi-Info-Brescia/dp/B07M8D3KT3.

May 2016
June 2016

Virtual Keyboard
- An Android App, written in Java, to type through the usage of the smartphone camera and a printing of a keyboard.

UNIVERSITY PROJECTS

May 2019
March 2022

Master's Thesis
- Title: Virtual coaching for the acquisition of new behaviours via BLE smart tags and wearable devices;
- Development of a Virtual Coaching system consisting of an Android and Wear OS app in Java, a backend with Java Spring Boot, a remote PostgreSQL database and a Tensorflow model executed on the Wear OS smartwatch for automatic recognition of daily actions using the smartwatch's sensors and data collected by BLE beacons applied to various objects (bottles, pills, ecc.).

September 2020 October 2020	**Parallel Transposition of Sparse Matrices on GPUs in CUDA**

Parallel Transposition of Sparse Matrices on GPUs in CUDA
Advance Computer, Architecture Project
- CUDA implementation of ScanTrans algorithm for GPUs sparse matrix transposition presented in the article dl.acm.org/doi/10.1145/2925426.2926291;
- Group of 2 people;
- Repository: github.com/nicolaserlonghi/Sparse-Matrix-Transposition-for-GPUs.

November 2019
January 2020

Modeling and synthesis of a floating-point single precision multiplier
Embedded Systems, Design Projects
- Implementation of the same project in different languages. Detailed documentation is available on the reporitory;
- Repository: github.com/nicolaserlonghi/modeling_synthesis_floating_point_single_ precision_multiplier.

May 2019
July 2019

Bachelor's Thesis
- Title: A mobile application for a virtual coaching system assisting the elderly in daily life activities;
- Development of an Android and Wear OS app in Java with data persistence on a NoSQL database, specifically Coachbase (remote) and Coachbase lite (mobile), which assists the user in activities of daily living by processing data collected by various beacons.

March 2019
April 2019

Fabric Defects Recognition
Signal and Image Processing, MATLAB Project
- Project in MATLAB that recognises defects on fabrics through their images;
- Group of 3 people;
- Repository: github.com/nicolaserlonghi/fabric-defects-recognition.

January 2019
February 2019

Extension of semantic of progamming language
Programming languages, ANTLR project
- Extension of the static and dynamic semantics of a simple programming language;
- Repository: github.com/nicolaserlonghi/antlr-university-project.

May 2018
August 2018

Pharmacovigilance App
Software Engineering, Android App
- The project is about an Android App, written in Java, which aids doctors and pharmacologists to monitor adverse reactions to drugs;
- Group of 3 people;
- Repository: github.com/nicolaserlonghi/farmaco-vigilanza.

May 2018

System Calls for I/O, process management, inter-process communication and synchronization

July 2018
Operating Systems, C Project
- The program deciphers a list of encrypted keys and then writes them on a file;
- Repository: github.com/nicolaserlonghi/KeyFinder_IPC.

April 2018

Shell programming in Unix/Linux
Operating Systems, Bash Project
- The program captures the list of running processes and writes them on a file, on which the user can perform various queries;
- Repository: github.com/nicolaserlonghi/BashProject_ServerMonitoring.

July 2017

Assembly Programming of Intel 80x86 Architecture
Computer Architecture, Assembly Project
- The program checks the pH status of a substance and open a valve to bring the substance back to neutral pH;
- Repository: github.com/nicolaserlonghi/PH_calculation_ASM.

February 2017

Automatic Design of a Programmable System
Computer Architecture, SIS Project
- The program checks the pH status of a substance and open a valve to bring the substance back to neutral pH;
- Repository: github.com/nicolaserlonghi/SIS-university-project.

TECHNICAL SKILLS

Programming Languages (In order of proficiency)	TypeScript, JavaScript, Java, HTML-CSS, C++, Python; *Educational knowledge:* Kotlin, C, CUDA C++, Bash, Objective-C, VHDL, Verilog, System C, System C TLM, ASM x86.
Frameworks (In order of proficiency)	React, Node.js, Spring Boot.

PERSONAL SKILLS

Mother tongue — **Italian**

Other languages — **English**

Listening	Reading	Speaking interaction	Speaking production
B2	B2	B2	B2

Communication skills

- Excellent ability to connect with people and form a team to gain a better result: this skill has been developed through various school and university projects, jobs and highly competitive cycling practice in which I have been engaged for years.

Organisational managerial skills

- Excellent ability to efficiently organize the time available, the sporting and educational career gave me over time the opportunity to strategically master this skill;
- Good management skills acquired through various work experiences and the course of studies.

CODING COMPETITIONS

2022	HashCode 2022 - Online Qualification Round - global ranking #4254.
2021	Reply Code Challenge - standard edition - global ranking #403.
2018	HashCode 2018 - Online Qualification Round - global ranking #2664.

ADDITIONAL INFORMATION

Driving licence	B.
Memberships	Cycling at a competitive level (2004 - 2016).