Umberto **Sgueglia**

SOFTWARE DEVELOPER

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"Always work hard on something uncomfortably exciting."

Education

Università di Bologna | *Sep. 2015 - Mar. 2018 Bologna, Italy*

MSc. COMPUTER SCIENCE

I have delved into advanced algorithms, modern wireless networking technologies, and Big Data. Text-mining and language processing have Had particular relevance in my path, on those fields I developed my thesis work.

Score: **110/110**

Universität Bielefeld | *Sep. 2016 - Aug. 2017 Bielefeld, Germany*

MSc. INTELLIGENCE SYSTEM

I performed a **double degree** program at Bielefeld University in Germany. During the development of the thesis I used text-mining techniques applied to medicine. Other relevant topics were virtual reality and the semantic web.

Università di Bologna | *Sep. 2011 - Mar. 2015 Bologna, Italy*

BSc. INFORAMTICA

Relevant course topics were basic algorithms, databases, networks, and operating systems in general. Besides standard topics I got into electronics. As my thesis work I developed an amateur home automation system, which could be used from an android native app.

Score: **95/110**

Skills

Languages	Python, Java, Scala, javascript, typescript, C, C++, C#, php, Arduino, SQL, bash, go
Database	MongoDB , CouchDB , CloudantDB, MariaDB, MySql, Sqlserver, DynamoDB
Blockchain	IOTA, Ethereum
Versioning	Git, Svn, Cvs
AWS	DynamoDb, Kinesis, lambda, step function, s3, cognito, EKS, Ec2, Cloudwatch, EFS, SQS, SNS
DevOps	Docker, Jenkins, Azure DevOps
Game	Unity3D, Maya
Big-Data	Spark, Hadoop
Back-end	Spring boot, Express, Node.js, Nest.js, Django, Swagger, Koa, NodeRed
Front-end	Angular 2+, HTML, CSS, JQuery
Testing	Unit testing, Postman, insomnia, Jest, Mocha,
Orchestrator	Kubernetes, DockerCompose
Infrastructure	RabbitMQ, Redis
Agile	SCRUM

Languages

Italian: Mother tongue

English: Fluent **lev: B2/C1**

Work experiences

Stellantis (Blue Reply IoT) | *Sep. 2021 - Dec. 2023 Torino, Italy*

Backend Developer

In working with Stellantis, we were part of the **in house software factory** team, communicating directly with the product team, through scrum methodology. We mainly focused on 3 big projects:

- **Autodrive Enablers** : For the next generation of self-driving vehicles, we interface with **HERE Maps**, which gives us the info of all the roads in the world by remapping the data to MongoDb. By taking advantage of **mongodb's geoindexes**, we are able to tell the vehicle which areas are best suited for autonomous driving and which are not.
- **Data Dispatching** : In this project we addressed the issue of ingestion of large amounts of data, it is about 1 mb every 15 seconds. The data is ingested, processed, and sent to third parties with different types of delivery.
- **Off board services** : Development of microservices in Typescript for the management of connected vehicles. The microservices serve all the different Mobile Apps for the Stellantis group. Optimization and performance play a key role in this context.

We mainly use two tech stacks. For off-board services we use Lambda function typescript deployed on **AWS Lambda** in communication with **DynamoDB**, **Cognito**, **Kinesis**, **EFS**, **EC2** and other **AWS** tools. The stack used for on-board services is mostly kubernetes clusters with **Java spring boot** applications that communicate with **MongoDB**.

Illimity Bank S.p.A (Blue Reply Cyber Security) | *Gen. 2020 - Jul. 2021 Torino, Italy*

Backend Developer

Microservices development in JAVA in combination with the **spring-boot** framework for managing a banking system.

- Azure pipeline design for deployment on **Kubernetes** cluster, integrated with **ISTIO**.
- Microservice development for login, pdf, document management and meta information using **MongoDB**.
- Microservice implementation for digital signature in combination with a more generic documental microservice.

Blue Reply Iot [Internal Asset] | *Jul. 2020 - Sep. 2020 Torino, Italy*

Software Architect

Implementation of a **kubernetes** cluster to manage an **emqx** MQTT broker of data arriving from sensors of many different types. Microservices in node.js and use of the **node-red** middelware application.

Blue Reply Iot e Politecnico di Torino [Internal Asset] | *Gen. 2020 - Jul. 2020 Torino, Italy*

Software Architect

Simulation of a supply chain that could exploit the operation of the **IOTA Blockchain** through the use of **ESP8266** microcontroller and **raspberry pi**. Angular 2+ is used to develop the interface to visualize the supply chain interactions.

Intesa San Paolo (Blue Reply) | *Nov. 2019 - Gen. 2020 Torino, Italy*

Fullstack Developer

Interface development for internal services monitoring.

- Implementation of standard intesa san paolo layout through a proprietary framework developed on Angular 2+.
- Development of **OAuth2** communication flows for call encryption and authentication.

Aptiv (Blue Reply IoT) | *May 2019 - Nov. 2019 Torino, Italy*

Fullstack Developer

Middelware development for an **Automated Guided Vehicle** system in a large auto parts manufacturing warehouse.

- JAVA microservices for direct communication with the robot to perform high-level operations.
- Angular 2+ front-end interface development for performing tasks.
- Maintenance and development of SqlServer databases, including element creations and handling large queries.

Blue Reply IoT e Università del Piemonte [Internal Asset] | *Mar. 2019 - Dec. 2019 Torino, Italy*

Software Architect

Microservice system based on k3s and raspberry pi. Modeling of a microservice that could adapt to machines with different sensor systems. The systems, although with different sensors, are **rolling update** for the various software components they need.

Avio Areo (Blue Reply Manufacturing) | *Jul. 2018 - Dec. 2018 Torino, Italy*

Fullstack Developer

Development of a part of the data exchange platform for the Eurofighter Typhoon aircrafts. The technology used to exchange data with the db was JAVA. Moreover some front-end parts have been implemented to interact with the application in jsf technology.

Extracullicular work

Code Challenge | *2022 and 2023 Torino, Italy*

Problem Designer

I was part of the team that designed the **Reply Code Challenge** problem, a **Google Hashcode-style** code optimization challenge. The problem was tackled by about 20000 developers worldwide. Since the Google was not held in the 2023, the Reply's was even more successful.

Garden Lights | *2022 Torino, Italy*

Software Developer

Through the use of a **raspberry pi** I have developed a lighting system for the garden. The raspberry communicates through **MQTT** protocol with **NODE MCU** boards that subsequently trigger LED bulbs. The application is equipped with "scenes" customizable through configuration inserted in a relational db **MYSQL**.

Plant Monitoring | *2020 Torino, Italy*

Software Developer

Through the use of a **raspberry pi** I have developed a monitoring system for a plant completely written in **Python**. In addition to the usual sensor compartment a camera is used that takes a photo every hour of the plant. The photo is taken only if there is enough light, the detection is done through a photoresistor. A **CouchDB** db is used to store the info of the sensors. Also when the photo is taken, it can be saved to a usb device or a **Google Photo** account. Through the use of **OpenCv** it is possible to produce automatically a timelapse of all the saved photos, meta information can be added.

Wine Dispenser | *2018 Caserta, Italy*

Software Developer

Through the use of a **raspberry pi** I developed a Wine Dispenser. Using ultrasonic proximity sensors, the system understands when a glass is placed in the correct position. At that point, motors are activated and they bring the wine from the barrels to the glass. The system is entirely developed in **Python**. Moreover there is an LCD display which shows the quantity of wine still in the barrels and its temperature. By using buttons it is possible to change the quantity of wine dispensed per portion.

Smart Vineyard | *2017 Caserta, Italy*

Software Developer

Through the use of **raspberry pi** boards and **nrf24l01** network cards I developed a monitoring system for a vineyard completely powered by solar panels. The monitoring consists of constant reading of sensors such as air humidity, earthquake or leaf humidity. Also sensors like anemometer and rain gauge have been used. A web client has been implemented for data visualization.

Courses and Certification

Kubernetes Application Developer | *2021 Linux Foundation*

Cloud Developer

A K8s developer can build, design, and expose native cloud applications for Kubernets. A CKAD can define kubernetes resources and use its core functionality to create scalable applications.