Fabio Battaglia

LEAD SOFTWARE ENGINEER ·

68 Avenue du Dix Septembre, 2550 Luxembourg

📱 (+44) 750 383 1291 | ✉ fabio.battaglia90@gmail.com | ⚑ 22-Sep-1990 | ⬡ farbiondriven | ✑ farbiondriven | in fabiobattaglia90

Summary

I am a Software Engineer with experience on high availability systems for Biometric Security, Space Sector and Travel Industry. I currently work as a **Lead Software Engineer** for Spire Global, a space-to-cloud data and analytics company that produces and operates a large constellation of nanosatellites, providing a space-as-a-service model to customers who are interested in space industry. I have good interpersonal and organizational skills and I always try to get a high level view on projects and deliverables. I regularly contribute over the stack exchange community and on Github.

Work Experience

Spire Global
Luxembourg, Luxembourg

SENIOR SOFTWARE ENGINEER — *Dec. 2022 - Present*

- Design and development of ground side tools to handle satellite constellations;
- Development of Microservices using **FastAPI, Flask, PostgreSQL, Terraform, Docker, Kubernetes, Github CI/CD actions** ;
- Coordination of product development project co-funded by the European Space Agency (ESA)

Remark AI
London, United Kingdom

LEAD SOFTWARE ENGINEER — *Sep. 2020 - Oct. 2022*

- Design and development of an application for thermal scanning, mask wearing recognition and **face recognition** using thermal or basic network cameras;
- Development of Microservices using **Flask, FastAPI, C++, MongoDB, MySQL, GraphQL, Kafka, Traefik, Docker, Kubernetes, Gitlab CI/CD Pipelines deploying in AWS or on-premise installations**;
- Migration of legacy python2 backends to python 3 and async implementations;
- Carried onboarding procedures for backend and frontend positions, provided mentoring for newcomers;
- Implemented RTSP re-streaming server using Gstreamer to stream local files to RTSP

Amadeus
London, United Kingdom

SENIOR SOFTWARE ENGINEER — *Sep. 2017 - Sep. 2020*

Description:
  - The company is a leading provider of IT services for the travel industry, hotels and airlines;
  - I joined the department developing Amadeus Altéa Departure Control System (DCS), a software suite which addresses Departure Control activities and Customers Management, supporting the whole passenger flow from Check In to Boarding;
  - My team was in charge of the passengers regulatory requirements, providing data to the country authorities and assisting passengers to bring the necessary documents for an international journey.

Activities:
  - Design and Development of server applications using **C++ 11**;
  - Coordination and development of an urgent delivery of a system for interactive submission to China authorities, from development to production in 3 months;
  - Design and development of a configuration system
  - Coordination for a proof of concept to use **Drools management system** to develop a new application, using Java, Openshift, MongoDB;
  - Mentoring of junior members and interns, giving **supervision and project planning** for dedicated projects

XiD Technologies
Singapore

SOFTWARE ENGINEER — *Feb. 2015 - Aug. 2017*

- Design and Development of applications connecting 3rd party devices performing Face and Fingerprint recognition to **XiD FaaS system, integrating Hanvon, ZK, Suprema** with custom Business requirements;
- Integrated Fingerpint and RFID Security System and CCTV for **Changi Airport Terminal 5 construction**, providing real-time screen alerts, anti-passback, WP expiration functionalities;
- Algorithm design using MATLAB for testing and C/C++ for development. Main techniques used are HAAR detection, ASM and histogram-based scoring;
- Development of Embedded Software and Overview of Hardware Architecture for XiD Revo Face 1.0 and Design of a fully in-house made 1.5 version using ARM 9 based architecture, controlling LCD screen, EM, Mifare RFID readers, Custom illumination, Custom Camera mount;
- Moved to an architecture using purely off-the-shelf components using 3rd party RTSP network cameras, illumination and actuation. I designed and developed an orchestrator collecting the datastream to our Face Recognition algorithm, managing all devices and connecting to our customer database; the system was developed using C#, using C# bindings for C++ libraries;
- Design and Development of an Android based application using a custom-made device, to capture attendance and perform verification of employees using Fingerprint and RFID card, using Android Studio, Java, MySQL.

ENEA
Rome, Italy

CONTROL SYSTEMS ENGINEER INTERNSHIP
Jun. 2014 - Oct. 2014

- In the context of research for Nuclear fusion technologies, the project's goal was to identify and characterize the behaviour of a Tokamak liquid lithium limiter, using an infrared thermal camera. Using MATLAB and C++ a real-time tool was built to monitor the heat distribution on the liquid limiter. After post-processing, a mathematical model of the heat distribution on the limiter was defined;

High School Concetto Marchesi
Catania, Italy

ROBOTICS TEACHER
Mar. 2014 - Jun. 2014

- Teaching as a Robotics Expert to a class of 20 High School students for an afternoon class, project financed by EU PON;
- Theory lessons covering basic concepts of Robotics, Electronics, Programming, Cinematics, Control systems;
- Hands-on sessions building an auto-orientating PTZ camera using Arduino, Servomotors, light sensors and a webcam;
- Building a mobile 2 wheels robot self oriented using light sensors for obstacle avoidance;

Education

University Of Catania
Catania, Italy

MASTER'S DEGREE IN AUTOMATION ENGINEERING AND CONTROL OF COMPLEX SYSTEMS
Apr. 2012 - Oct. 2014

- Studied **Control Systems, Bioengineering, Image Processing, Industrial Processes and automation, Sensors technologies and data acquisition, Robotics basics and Behavior analysis**;
- Developed projects for humanoid robots using image processing, Authonomous driving for mobile robots using infrared sensors, PLC simulation of parking lot, Inertial sensors integration for walking calcuations, CNN neural networks development using STM32 dev. boards;
- Thesis: **"Frascati Tokamak Upgrade: New Trends In Model Identification Of Specific Thermal Phenomena"**. Supervisors: Prof. Luigi Fortuna, Dott. Giuseppe Mazzitelli, Ing. Arturo Buscarino;
- Final Mark: 110/110 cum laude with special mention;

University Of Catania
Catania, Italy

BACHELOR'S DEGREE IN COMPUTER ENGINEERING
Oct. 2008 - Mar. 2012

- Studied **Mathematics, physics, electronics, networking, software engineering, Operative Systems, C/C++/Java and Assembly languages, Databases, Control Systems**
- Thesis: **"NetFPGA Architecture and Hardware Description"** Advisors: Prof. Giovanni Schembra, Dott. Diego Reforgiato;

Languages

Italian: mother tongue. English: C2 full professional proficiency

Skills

Programming Languages	C/C++ (03,>11), Python3, Typescript, Rust, C#, Java, Matlab, Latex
Python	FastAPI, Pydantic, Flask, SQLAlchemy, Pymongo, Pytest, MyPy
Frameworks	OpenCV, Tensorflow, FFMPEG, GStreamer, Boost, Android SDK
Protocols	HTTP 1.1 - 2, gRPC, RTSP
Data exchange formats	JSON, YAML, XML, CSV, EDIFACT, TOML, Protocol Buffers, Base64, GeoJSON
Version Control	Git on Gitlab, Github, Bitbucket. Mercurial, SVN
Database	PostgreSQL, MySQL, Oracle, Microsoft SQL, SQLite, MongoDB
DevOPS	Docker, Docker-compose, Terraform, Kubernetes, Github Actions, Gitlab CI/CD pipelines, Gitlab Runner, Jenkins
Project Management	Agile, Scrum/Kanban, being Scrum Master for projects at Amadeus and Remark AI, Waterfall
Electronics	STM32 microcontrollers, Arduino, Rapsberry PI, Prototyping using Overo ARM Based Computer-on-modules and custom implementations (XID Technologies), Zigbee, Siemens PLCs, PCB design, Analog Implementations of chaotic circuits, Servomotors, Brushed DC motors, Flash or Infrared LED based illumination

References

Carmelo Pistorio	Chairman and CEO of XID Technologies and Authentikate
Marc Adam	Manager at Amadeus London