# Python Software Engineer

|  |  |
| --- | --- |
| Giunio De Luca | Contact email: [giuniodl@live.it](mailto:giuniodl@live.it) |

As a software engineer, my dedication to creating pioneering solutions is unwavering.I've had the opportunity to contribute across diverse fields such as research, athletics, and the energy industry, teaming up with government agencies, research institutions, and startups.

I support the principles of writing clean code and adhere to Test-Driven Development, actively encouraging industry best practices at conferences and seminars.

I am an expert in the field of developing APIs and I am the author of the book:

FastAPI Cookbook, develop high-performance APIs and web applications with Python.

## Skills

|  |  |  |
| --- | --- | --- |
| * Clean-code * Test-driven development * OOP * Design Patterns * SOLID principles | * Python * Javascript * Google Cloud Platform * Docker * Terraform | * Git best practices * Dev-Ops * Concurrency programming * Cross OS development * HTML, Javascript and CSS |

## Working Experience

### 03/2024 – 06/2024 Technical Author Packt Publisher remote

Packt Publisher is a major editor and e-learning provider in the tech industry worldwide. I have been the only author of the book “**FastAPI Cookbook**”. The cookbook aims to be a reference for developers that needs to build high traffic applications with **Python**.

It cover all the knowledge required by a back-end developer to deliver modern, secured and efficient API.

Some of the recipes cover:

* Connect applications to **SQL** (**SQLite** **Postgres**) and NoSQL (**MongoDB**) databases
* Securing endpoints with **OAuth2**
* Benchmark and profile your application
* Expose **LLM** models and **RAG** **LLM** applications
* Websocket setup and securing practises

The book is available on the major stores here is a link of example:

<https://www.amazon.com/FastAPI-Cookbook-Develop-high-performance-applications-ebook/dp/B0D7VKC9TH>

### 04/2023 – 03/2024 Python Developer Coreso Brussels, Belgium

Coreso is one of the regional coordination centers for European Transmission System Operators, responsible for the South Western Europe borders.

I joined the Internal Software Development (ISD) team to work on the development of web applications to support energy trade operators in their daily work.

In this role, I accomplished the following task:

* Test-driven development (**pytest** dependency injection and test parametrization)
* Setup Integration testing
* Event driven programming (**Kafka**)
* Database management with **Postgres**
* FTP communication setup
* Backend development with **FastAPI** (Django-like framework for backend)
* Basic Front-end development with **Vue JS**, **Javascript**, **HTML** and **CSS**
* Setup GitLab CICD pipelines

### 10/2022 - 03/2023 Python SWE Gorilla Antwerpen, Belgium

Gorilla is developing a data-driven platform for energy retailers.  
The company, already present in 3 countries (2 continents), aims to empower clients with solutions for pricing, forecasting, and reporting.

I joined the team to contribute to the back-end API of their SaaS platform.

In this role, I executed the following tasks:

* define features for the back-end API (**Python**) with in-house framework (using **Pydantic**) deployed on **AWS**.
* Test-driven development (**pytest**), with **PostgreSQL** database interactions.
* Manage database migrations with **alembic** library.
* Test local database with **Docker.**
* Refactor code according to Object Oriented Programming (OOP) and functional programming (FP).
* Implement new features from analysis to code.
* Maintain code and bug fixing.
* Write technical documentation.
* Versioning control system development in Git (**Github** and **Bitbucket** host).

### 09/2020 - 09/2022 Python SWE Royal Belgian Football Association Belgium

Royal Belgian Football Association is the governing body of football in Belgium.  
As a Software Engineer within the organization, I worked on several cloud-based projects.  
One of the projects I contributed to the development of the backend of the official app:

<https://play.google.com/store/apps/details?id=be.rbfa&hl=en.>  
Another project, that I’ve been working on, consists in providing support to the men's national players (Red Devils) performance team.  
Overall, I carried on the following tasks:

* uphold and enhance RESTful monolithic and microservices architecture, utilizing **FastAPI** and **Flask** Framework and integrating it with NoSQL **Firestore** database, secured by a **Golang**-based gateway service.
* Implement comprehensive testing, including unit tests, integration tests with **Pytest** and **Behave**, and performance analysis to guarantee software quality and performance.
* Local testing setup with **Docker**, **Functions Framework**, Firestore local emulator.
* Design, develop and deploy data pipeline solutions in **Google Cloud Platform**, leveraging services such as Queues, Cron Jobs, Virtual Machines and containerized services with **Cloud Run** (containeraized-solution), to drive business value and scalability.
* Object Oriented Programming (OOP) and functional programming (FP).
* Streamline codebase through refactoring, leveraging the latest features of Python version 3.6 to 3.10, and implementing concurrent programming with **asyncio** library and design patterns to increase requests traffic control, and enhance operational security through resource scaling, network access and firewall setup.
* Troubleshoot and optimize MySQL (**BigQuery**-dialect) code integration within python packages, ensuring SQL formatting consistency
* Maintain and monitor cloud infrastructure with **Terraform** IaaC tool, including **CICD** pipelines, network access and services, ensuring robust and optimized system performance
* Versioning control system development in Git (**Github** and **Bitbucket**)
* Guide and mentor internships to drive skills transfer and growth.

During my period working at RBFA, I contributed to win the 2021 UEFA GROW AWARDS for the digital strategy, awarded by Louis Figo.

<https://www.rbfa.be/en/news/rbfa-wins-prizes-2021-uefa-grow-awards>

### 11/2015 - 06/2020 Python Researcher Laboratoire EM2C Gif-sur-Yvette, France

The EM2C laboratory, a CNRS (National Center for Scientific Research) unit and a laboratory of CentraleSupélec, combines academic research with applied studies in the fields of transportation and energy.  
I have been hired to work on the 'Clean-gas' project of the European Commission.  
The scientific goal of CLEAN-Gas is to develop new experimental and numerical tools for improving natural gas combustion in innovative burners ([http://www.clean-gas.polimi.it).](http://www.clean-gas.polimi.it)

During my work, I carried out the following tasks:

* Model and implement combustion phenomena in **HPC** parallel code using **Fortran90** and OpenMPI
* Manage **Linux** systems and craft **shell** scripts to optimize PBS computing time slots computations
* Develop powerful data pipelines in Python to handle remote h5 databases, utilizing **Python** libraries such as **Pandas**, **NumPy**, **Matplotlib**, **SciPy** and **Flask**. Rendered into web pages (HTML, Javascript, CSS)
* Versioning control system development in Git (**Gitlab**)
* Process 3D results with **VTK** library in Paraview to deliver insightful visualization

The work culminated in a published manuscript, which can be found at the following link: <https://tel.archives-ouvertes.fr/tel-03347525>

## Education

#### **PhD**

Doctor in Energetics, Specialisation in Combustion Simulation

**École CentraleSupélec, Gif-sur-Yvette, France**

*Graduation 06/2021*

#### **Post-graduate research master**

Numerical and Environmental Fluid Dynamics

**Von Karman Institute, Sint-Genesius-Rode, Belgium**

Graduation 06/2015

#### **Master degree**

Industrial Engineering

**University of Basilicata, Potenza, Italy**

Graduation 04/2014

#### **Professional Training course for executives**

Java and JEE

**Inti Formation, Paris, France**

October to December 2019

## Certifications

*Kubernetes and Cloud Native Associate 05/2023*

*Google Cloud Certified Professional Security Engineer 03/2023  
Google Cloud Certified Professional Network Engineer 02/2023  
Google Cloud Certified Associate Engineer* 04/2021

## Spoken Languages

|  |  |
| --- | --- |
| English | fluent |
| French | bilingual |
| Italian | native speaker |
| Dutch | basic knowledge |

## External links

Personal Github repo[:  
https://github.com/giunio-prc](https://github.com/giunio-prc)