# Python Software Engineer

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

As a software engineer, 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

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

## Working Experience

### 06/2024 – present FUll stack developer Engie SA Brussels, Belgium

Engie SA is French big corporate in the energy field and part of CAC40 stock index.

I joined the Research & Innovation division in Brussels to develop company’s applications and provide IT support to reseacher. In this role accomplished the following tasks :

* Promote extreme programming praticses accross the team
* Develop and maintain a complete application (backend, frontend, infrastructure and monitoring) from scratch to internal fund allocation. The application is planned to used accross the group in beginning 2026
* Setup team cookiecutter templates to streamline delivery process of scripting softwares

### 01/2025 – 06/2025 python Coach (part time), tekno Family Brussels, Belgium

Tekno Family is a charity organisation that promotes coding education program to young grew in difficult Brussels neighbourhood.

I was coach for the afterwork course Data Science with Python (30 hours)

### 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 author of the book “**FastAPI Cookbook**”. The cookbook aims to be a reference for developers that needs to build robust applications with **Python** to support high traffic interactions.

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**.
* Manage database migrations with **alembic** library.
* Test local database with **Docker.**
* Refactor and improve legacy code.
* Implement new features from analysis to code.
* Maintain code and bug fixing.
* Write technical documentation.

### 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.
* 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
* Guide and mentor 5 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 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 to avoid manual work
* Develop data pipelines in Python to handle remote h5 databases, utilizing **Python** libraries such as **Pandas**, **NumPy**, **Matplotlib**, **SciPy**
* 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

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| 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)