

# Youness EL HOUSSAINI

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Address: Paris, France (open to relocation)

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**Data Scientist | Data Engineer | Software Engineer**  
**with strong background in engineering R&D**  
**Fluent: English, French, Arabic | Intermediate: German**

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**Professional, Operational, Team Spirited**

## Summary

Cross trained software engineer with strong background in machine learning applied to varied R&D engineering fields such as renewable energy, mechanics and electronics. Being both autonomous and team spirited within cross-functional teams. Adopting agile practices including pipelines automation for testing, building and deployment in addition to data visualization and big data analytic.

## Key skills

**Programming:** Python, C/C++, java, Fortran, Shell, SQL, LookML, OpenMP, OpenCL, Cuda, Matlab, Scilab, VB.NET, Modelica, PyQt5, **IDE:** VS Code

**Software:** ABAQUS, Freefem, GMSH, OpenModelica, GenOpt, Dymola, Aspen+

**Database:** Oracle, MySQL, Postgresql, MongoDB. **Dataviz:** Matplotlib, Seaborn

**Data engineering:** Hadoop, MapReduce, Spark, Kafka

**Data analytics:** Looker, Tableau, Power BI, **Datawarehouse ETL:** BigQuery

**Machine Learning:** PyTorch, TensorFlow, Keras, Scikit-Learn, NumPy, Pandas, Matplotlib, SciPy, CV2, Hugging Face, Google Colab, Jupyter, **NLP:** NLTK, Spacy

**DevOps:** Docker, Kubernetes, GitHub, GitLab, Jenkins, Azure DevOps, Jira

**Cloud:** Google Cloud Platform (GCP), **OS:** Windows, Linux/Unix, MacOS

**Back-end:** Flask,Django, **Front-end:** HTML, JavaScript, CSS

**Scope:** Big data, Artificial Intelligence, Machine Learning, neural networks (CNN, RNN, DNN), Computer Vision, Natural Language Processing, Automation, Agile Software Development, Scrum, Cloud Computing, ETL, CI/CD, DevOps, APIs, Constrained Optimization, Statistics and data analytic, Electrical and energy Engineering, Embedded Systems, Smart Grid, High performance computing.

**Prium consulting**, Paris, France (5/2023 – ongoing)  
**Python developer, Software engineer, R&D engineer**

- Developing functional tests for a Qt based software enabling SoC developers to create physically valid NoCs faster within **Arteris IP**
- Developing a charging station web application within **Adherence**

Stack: Python, C++, PyQt5, FastAPI, React, AWS, Gitlab CI/CD, Docker compose

**INRIA**, Lille, France (12/2021 – 04/2023)  
**Python developer, Software engineer, R&D engineer**

- Development, deployment and maintaining a web application to solve bi-level optimization problems
- Development of a bi-level optimization formulation library covering linear and bi-linear problems for energy and transport application
- Orchestration and development of mixed integer optimization solvers

Stack: Python, C++, SQL, Flask, HTML, SSH, Gitlab CI/CD, Docker, Cplex, Gurobi

**Fraunhofer IWM**, Freiburg, Germany (09/2018 – 11/2021)  
**Data engineer, Data scientist, ML engineer, R&D engineer**

- Development of desktop/web applications for data visualization, data processing
- Modeling processes on Abaqus/CAE and building FEA based model with reduced computing time for parametric study
- Parameter identification: Multi-parameter optimization workflow based on Abaqus or/and model order reduction
- Developing deep learning models (CNN, MLP, RNN) to solve the inverse problems
- Development of an automatic tool of defect detection based on ultrasonic testing images
- Pipelines creation and data processing in addition to code optimization, refactoring and unit testing

Stack: Python, C++, Fortran, SQL, PyQt5, Django, HTML, CSS, Jenkins, Docker

**CEA**, Grenoble, France (03/2016 – 09/2016)  
**Data scientist, ML engineer**

- Dynamic optimization of load shedding in district heating: modeling and simulation of a virtual district heating

Stack: Python, Modelica, Scilab, Dymola, Genopt

**Fraunhofer ISE**, Freiburg, Germany (07/2014 – 01/2015)  
**Energetic systems engineer, Research assistant**

- Performance characterization of a polyvalent thermal converter: modeling and experimental study on the development of a test method

## Education

### **University of Strasbourg, UFR Mathematics & Information, Strasbourg, France** **Master of Scientific Computing and Mathematics for Information (CSMI)**

Master (2018 – 2021): Advanced and practical courses in applied mathematics and computer science with a large set of skills required by the digital revolution:

- Algorithmic, C, C++, Python, Database (SQL/NoSQL)
- Random models, Signal processing and Deep learning
- Parallel computing, Scientific computing, Optimization and Optimal control

### **National School of Mineral Industry, Rabat, Morocco** **Engineering studies (5 years degree)**

3<sup>rd</sup> year (2013 – 2014): common core and specific training on renewable energy

2<sup>nd</sup> year (2012 – 2013): common core and specific training on chemical and industrial processes and energy systems

1<sup>st</sup> year (2011 – 2012): common core about techniques for engineers

The training includes subjects concerning:

#### **Applied mathematics:**

- Process control and Optimization, Modeling and Simulations
- Numerical methods and Operational research

#### **Physics:**

- Applied thermodynamics, Thermal transfer and Fluid mechanics
- Smart grid and Industrial electricity, Energy storage, Solar & wind energy

### **Preparatory classes of Koutoubia, Marrakech, Morocco** **Diploma of higher education (2 years, count as part of engineer diploma)**

1<sup>st</sup> & 2<sup>nd</sup> year (2009 – 2011): Preparatory classes focus mainly on theoretical mathematics and physics:

- Mathematics: algebra, analysis, topology, discrete mathematics
- Physics: thermodynamic, optics, electromagnetic and mechanics

### **Baccalaureat in Mathematics and Industrial drawing, Marrakech, Morocco**

## Competitive activities

### **Middle distance runner (ASS Club)**

### **Chess player (Unistra club)**

- Won several regional competitions in both activities
- Qualified to the French cross-country championship in 2018

## Languages

**English:** Fluent

**French:** Fluent

**German:** Intermediate

**Arabic:** Native speaker