Mohamed MARZOUGUI

Data Scientist Researcher
Senior Control System Engineer

Tunisia
+216 25 05 03 06

Country	Tunisia
Date of Birth	1990/10/11
E-mail	marzouguimouhamed@gmail.com
Portfolio	LinkedIn . GitHub . Kaggle . GrabCAD
Competence areas	Deep Learning, Data Science, Machine Learning, Artificial Intelligence, Statistics, Control Systems, Industrial Programming, Signal Processing, Troubleshooting Skills

Positions

10/2021 - Present

Data Scientist at STEG, Tunis, Tunisia,
- *Analyzing, and Interpreting Data to implement AI Algorithms using DL and SW Engineering tools, to optimize and Develop the system's Performance and Accuracy.*
- *Expertise in Dynamic Dashboarding using Power BI for Effective Communication of Insights and Analysis.*,
Tools: **TensorFlow, Matplotlib, Scikit-Learn, Oracle, Toad, SQL, Power BI**,
Projects:
- Smart Grid in collaboration with eFluid, SIEMENS and SagemCom
- Detection of Fraudulent Energy Consumption,
- ERP (Enterprise Resource Planning) System in collaboration with **SAP Company**
- Payment API for online Electricity bill payments, in collaboration with **Tunisian Poste** and **STB Bank**.

03/2023 - Present

Research Scientist at Signal, Image, and Information Technology Research Laboratory (ENIT), Tunisia,
Developing a Transformer Model capable of Analyzing and Interpreting Medical Images (RX, MRI ..) ,
Tools: **Keras . PyTorch . Seaborn . Numpy . Pandas**

10/2019 - 10/2021

Control Systems Engineer at STEG LPG, Gabes, Tunisia,
Head Of The Automation Department within the Tunisian Company of Electricity and Gas (Plant Petroleum Gas Liquefier), Ensure tasks related to the Design, Development, Control and Maintenance of the Systems Refer to the Quality and Safety Standard,
Tools: **DCS, EMERSON Delta-V, PLC, Siemens, Notifier, MECI, ATEX, IEC-61131-3, HART, MODBUS, Profibus**,
Projects:
- Control System hardware and software upgrade DCS EMERSON DeltaV
- Establishing a new loading station to provide trucks with non odorized butane from the GPL plant PLC Siemens S7-300
- Project to migrate the hard wired logic of the port's valve control panel to Ladder logic PLC Siemens S-7200
- Upgrade the Fire Protection System (Notifier AM 6000 fire ,Gas detection system)
- Integrating two valves on the gas plant's control system DCS

10/2018 - 10/2019

Instrumentation Engineer at STEG LPG, Gabes, Tunisia,
Maintain and oversee installation and commissioning of instrumentation and control systems for LPG industries, to ensure optimal functionality and performance.,
Tools: **Fluke . Hart Communicator 475** ,
Projects :
- Triennal Oil and Gas Plant revision

06/2017 - 06/2018 **Automatic Teacher, Gafsa, Tunisia,**
Teaching students based on national curriculum guidelines within my specialist subject areas (electronics).,
Tools: **Xrelais . LabView . ISIS . AutoCAD**

03/2016 - 12/2016 **Research Associate at Signal, Image, and Information Technology Research Laboratory (ENIT), Tunisia,**
Conducting Research Project focused on Analyzing and Classifying Environmental sounds using Machine Learning (ML) algorithms.,
Skills: **Research Design . Data Analysis . Project Management**

03/2016 - Present **Co-Founder at Furniture Business, Redeyef, Tunisia,**
Establishing the manufacturing lines, configuring and maintaining the different machines , Leadership, TeamWork, Creativity, Organisation.,
Tools: **SolidWorks . G-code . CAO . AutoCAD**
Projects :
- Building CNC Wood Machine 4 axis

11/2013 - 06/2014 **End of Studies Project at SAGEMCOM, BenArous, Tunisia,**
End of study project for the National Diploma of Engineer in Industrial IT and Automation (The project consisted in performing a study, based on which I designed and developed an automated prototype for a dielectric tester),
Tools: **Microcontroller, NI PCI-6518, LabView, Xrelais, SolidWorks.**

Education

09/2022 - Present **Research Master in statistics and Data Science ,**
University: National Engineering School of Tunis,
Projects:
- Maximizing Gear System Reliability with Vibration Analysis-Based Fault Classification
- Pitch Detection using TFD, TFTD, Wavelet Transform
- Brain Tumor Classification AI model based on Convolutional Neural Networks (CNN) on MRI images

06/2017 - 06/2018 **Training Degree in science of Education,**
University: Center of Continuing Education

09/2015 - 06/2016 **Research Master Degree on Automatic and Signal Processing,**
University: National Engineering School of Tunis,
Projects:
- Classification of environmental signals using DL and Gabor filter
- VR "Mini Golf": VR Application for children with Becker's Deficiencies

09/2009 - 06/2014 **National Engineering Diploma in Industrial and Automatic Computer Science,**
University: National Institute of Applied Science and Technology

06/2009 **Scientific Baccalaureate in Technical Science ,**
School: 2 Mars 1934 High School (With Honors)

Professional Skills

- An extensive background in applied mathematics (Linear Algebra and Stocastic Calculus using Numpy and Matplotlib Python libraries) and in **Signal Processing.**
- Machine Learning Specialist with a focus on supervised Deep Learning Algorithms **(DNN, CNNs)** using **Tenserflow** and **Keras** python libraries.
- Basic understanding in general Machine Learning algorithms **(NLP , LSTMs , RNNs, GANs, Naïve Bayes Classifier, Support Vector Machine, Decision Trees, Random Forests)** using **Scikit-learn** and **Tenserflow** python libraries.
- Working with **Emerson DCS Systems** and **SIMENS(S7-200, S7-300)**.
- Calibration of a Variety of Sensors already in use in the Industrial setting.

CERTIFICATES

2013	- Dassault Systems	
	- CSWA SolidWorks	

2020	- Specialisation Deep Learning ID: (EM9P98CQ7CAW)
	- Neural Networks and Deep Learning
	- Improving DNN: Hyperparameter Tuning, Regularization and Optimization
	- Structuring Machine Learning Projects
	- Convolutional Neural Networks
	- Sequence Models

2020	- Specialisation DL.AI TensorFlow Developer ID: (WPW3YNZ6SYLP)
	- Introduction to TensorFlow for AI, Machine Learning, and Deep Learning
	- Convolutional Neural Networks in TensorFlow
	- Natural Language Processing in TensorFlow
	- Sequences, Time Series and Prediction

2020	- Python courses
	- Getting Started with Python
	- Python Data Structures
	- Using Python to Access Web Data
	- Kaggle (Pandas, Data Visualization)

2021	- Tunisian Company of Refining Industries (STIR)
	- Perfectioning in Regulation-PR2

Languages

Arabic:	Native Language
French:	Full Professional Proficiency
English	Professional Working Proficiency
German	Elementary Proficiency

Programming Skills

Coding Languages	Python, C/C++, Java, VHDL, SQL
Frameworks	TensorFlow, Keras, Scikit-Learn , Seaborn, Matplotlib, Pandas, NumPy, PySpark

HOBBIES

Reading . BasketBall . Billard . Swimming . Drawing