

# Ali MASRI

**Nationality:** Lebanese


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## ABOUT ME

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I am a Research and Development Engineer dedicated to the field of Big Data and Artificial Intelligence. I have strong research and professional background with a Ph.D. degree in Computer Science from the University of Paris-Saclay and VEDECOM institute. In the domain of data science, I provide R&D services, consultancy services, and data science training.

## WORK EXPERIENCE

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### Software architect

**Cogent Softech** [ 1 Jul 2020 – Current ]

**Address:** Dearborn Heights, Michigan (United States) - <http://cogentsoftech.com/>

**City:** Dearborn Heights

**Country:** United States

- Create technical designs and functional models of software systems.
- Design system architectures, modules and components related to the business' or customer requirements.

### Research and Development Engineer

**Cognitus/Intelligencia** [ 1 Nov 2017 – Current ]

**Address:** Paris (France) - [www.cognitus.fr](http://www.cognitus.fr)

**City:** Paris

**Country:** France

- Lead the Data Science team by monitoring and developing various AI and Big Data projects.
- Help customers optimize/upgrade architectures/pipelines by bringing in new Big Data and AI solutions.
- Provide enterprise data science training to help customers build their own data science teams.

## Researcher

**VEDECOM** [ 2015 – 2017 ]

**Address:** Versailles (France) - [www.vedecom.fr](http://www.vedecom.fr)

**City:** Versailles

**Country:** France

- Research on transportation multimodality for smart cities
- Proposed a new model to make multimodality easier to implement and maintain
- Proposed a three-level integration solution on:
  - Schema level
  - Data level
  - Services level
- Implemented many software libraries as multimodal integration solutions
- Published many articles in international conferences and journals

## Backend and Mobile Developer

**Logixy** [ Jan 2016 – Dec 2016 ]

**Address:** Paris (France)

**City:** Versailles

**Country:** France

- Business process design
- Database design and implementation
- Design and build a service oriented architecture using JAX-RS
- Develop and integrate web application using Struts2
- Develop and integrate an Android mobile application

## Java Developer

**3iConsulting** [ Jun 2015 – Dec 2015 ]

**Address:** Palaiseau (France)

**City:** Palaiseau

**Country:** France

- Maintain and solve many bugs in a pre-built production solution
- Implement helper tools for automating manual tasks

## Research and Development

**UVSQ and 3iConsulting** [ Feb 2014 – Jul 2014 ]

**Address:** Versailles (France)

**City:** Palaiseau

**Country:** France

- Professional part related to my master thesis in supply chain management and service oriented architecture
- Help the company in adopt a service oriented architecture by designing and implementing a new version of a legacy logistics system

## EDUCATION AND TRAINING

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### Ph. D. in Computer Science

*Université Paris-Saclay*

**Address:** Paris (France)

### Masters in Information and Decision Support Systems

*Lebanese University Faculty of Sciences*

**Address:** Beirut (Lebanon)

### Bachelors Degree in Computer Science

*Lebanese University Faculty of Sciences*

**Address:** Beirut (Lebanon)

## PROJECTS

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### Eagle Eye - Intelligencia

Features:

- A real-time solution for managing and monitoring Internet of Things video streaming devices.
- Runs state-of-art image\video analysis with the ability to deliver real-time reporting and alerting to clients.
- Easy-to-deploy architecture with interactive dashboard, android application and a companion application to extend the range of supported devices where no custom software could be installed.

Responsibilities:

- Design and build an auto-scaling, extensible, and distributed event-based architecture
- Implement the core event system using RabbitMQ and Python
- Implement and extensible AI core that supports easy integration of pluggable AI models
- Implement, train, and deploy AI models plugins for face detection, face recognition, gender and age estimation, weapon detection, and object tracking.
- Implement a people tracking solution that integrates IOT location data with face recognition data to track movements of recognized entities.
- Implement a REST API for managing the cluster and querying data
- Write technical reports and code documentation
- Manage the development of both the android mobile application the Angular web application

### Lebanese License Plate Recognition - Intelligencia

- Manage the research and development process for investigating various recognition approaches for Lebanese license plates
- Implement a data generation algorithm to mimic Lebanese license plates data
- Implement a data processing pipeline using computer vision techniques and data augmentation that is trained on convolutional neural networks
- Implement an LSTM based approach using Connectionist Temporal Classification (CTC) loss
- Integrate with YOLO for car and license plate detection
- Deploy the system on a Django-based web application

### **ID Card Detection and Recognition - Intelligencia**

- Build a multi-step machine learning pipeline to detect and recognize ID cards information
- Integrate a deep learning Card detection model
- Build a classification model to detect ID cards types
- Build a preprocessing pipeline to denoise, un-skew and clean images
- Build a Region of Interest detection using generic and region-of-interest templates
- Integrate with a fraud detection model for detect possible data change
- Implement a REST API for managing and querying the system
- Implement a preprocessing pipeline for handling Arabic letters and digits

### **Enterprise Search Solution - Dar Al Handasa**

- Deliver a study report on existing solutions, and advise the best architecture that suits the client's needs
- Organize and consult the implementation of an enterprise search solution using Apache Solr
- Build the complete data processing pipeline, while ensuring an incremental data extraction and integration
- Deliver a best practices report for infrastructure configuration and implementation

### **Incremental ETL - Dar Al Handasa**

- Design and implement an incremental Extract Transform Load (ETL) process from an existing data warehouse system into Hive under Hadoop Distributed File System (HDFS)
- Use Change Data Capture to read periodic updates into an Apache Spark processing engine
- Implement data versioning pipeline using Apache Spark
- Write processed data into Hive
- Design Hive views to query fresh up-to-date data

### **Real-time Tweets Data Processing System - Al Jazeera News**

- Use Apache Spark on Databricks to implement a high performance tweet collection and processing system
- Implement a Spark Streaming solution that listens to new updates from Azure CosmosDB
- Use Scala for high performance computations
- Use Azure Cognitive Services to extract entities, keywords, and translate tweets
- Implement custom pre-processing pipelines on tweets to extract hidden data in tweets

### **Intelligent News Gathering Platform - Al Jazeera News**

- Design a system for fast news gathering and analysis based on Tweets
- Design and integrate a new solution using Events Hub, Databricks, CosmosDB, and Azure Cognitive Search
- Implement a dynamic, multi-layer filtering solution that uses heuristics and machine learning to filter irrelevant Tweets
- Design feature engineering pipelines to extract user-based and tweet-based scores for filtration
- Implement a monitoring system that periodically updates pre-calculated scores based one new information
- Integrate with real-time PowerBI dashboards

### **Festival Counting System - Intelligencia**

- An extensible object tracking and counting system used to count and study the movement of crowd in festivals.
- The core system is developed in Python with the ability to choose any object detection method (YOLO, MobileNet, etc.)
- Use a centroid tracking algorithm to monitor objects movements
- Implement a backend system that visualizes hot areas in a given map

## Email to Odoo Task Automation - Logixy

- Implement a Python application that listens to new Gmail messages from a given sender, downloads and extracts fields from PDFs, and finally send extracted fields to an Odoo ERP instance.
- Use Google's Pub/Sub system to listen to new emails
- Implement a PDF fields extraction
- Implement an Odoo client that saves extracted information into their relevant tables
- Implement a local folder watcher, to enable manual PDF uploads

## DIGITAL SKILLS

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**JAVA / Python / Apache Spark / Deep Learning / Machine Learning / Git / Linux / Relational and Non-Relational Databases / Message Queues / Amazon Web Service (AWS) / Azure Machine Learning Studio / Microsoft Azure / Apache Solr / Azure cognitive search / Databricks / Event Driven Architecture / Computer Vision / Natural Language Processing and Text Analytics**

## CERTIFICATIONS

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### Natural Language Processing Specialization by deeplearning.ai

<https://www.coursera.org/account/accomplishments/specialization/certificate/MTFTQAZB5PRT>

### IBM Data Science Specialization

<https://www.coursera.org/account/accomplishments/professional-cert/Y4RX82N2GBZQ>

### Deep Learning Specialization by deeplearning.ai

<https://www.coursera.org/account/accomplishments/specialization/XH5KKMY3RZDR>

### Machine Learning by Stanford University on Coursera

<https://www.coursera.org/account/accomplishments/verify/9FPZPHCPS297>

### Google Developer Certification - Associate Android Developer

<https://bcert.me/bc/html/show-badge.html?b=bsigjqw>

## HONOURS AND AWARDS

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### Lebanese Collegiate Programming Contest

LCPC

Placed 4th in the Lebanese Collegiate Programming Competition

### Google Associate Android Developer Scholarship

Google

Receive a full scholarship for Google's Associate Android Developer Program

## DRIVING LICENCE

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Driving Licence: **B**

## ONLINE PUBLICATIONS

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### Personal Blog

<http://alimasri.github.io>

## **Towards Data Science**

<https://towardsdatascience.com/search?q=Ali%20Masri>

## **Heartbeat**

<https://heartbeat.fritz.ai/search?q=Ali%20Masri>

## **Marktechpost**

<https://www.marktechpost.com/author/ali-masri/>

## **The Startup**

<https://medium.com/swlh/search?q=Ali%20Masri>

## **RESEARCH PUBLICATIONS**

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**Ali Masri. Multi-Network integration for an Intelligent Mobility. Ph.D. Thesis.**

<https://tel.archives-ouvertes.fr/tel-01669051/>

**Ali Masri, Karine Zeitouni and Zoubida Kedad. Retry: Integrating ridesharing with existing trip planners. SIGSPATIAL2017**

<https://dl.acm.org/citation.cfm?id=3140022>

**Ali Masri, Karine Zeitouni, Zoubida Kedad and Bertrand Leroy. An Automatic Matcher and Linker for Transportation Datasets. ISPRS2017**

<https://www.mdpi.com/2220-9964/6/1/29>

**Abdelfattah Idri, Mariyem Oukarfi, Azedine Boulmakoul, Karine Zeitouni, Ali Masri: A new time-dependent shortest path algorithm for multimodal transportation network. ANT/SEIT 2017: 692-697**

<https://doi.org/10.1016/j.procs.2017.05.379>

**Ali Masri, Karine Zeitouni, Zoubida Kedad and Bertrand Leroy. Automatic Detection and Mapping of Geospatial Properties in Transportation Data Sources. SIGSPATIAL2016**

<https://dl.acm.org/citation.cfm?id=2996959>

**Ali Masri, Karine Zeitouni, Zoubida Kedad, Bertrand Leroy and Gabriel Kepekian. Discovering Multimodal Routes using Connection Patterns. ITSC2016**

<https://ieeexplore.ieee.org/abstract/document/7795936/?reload=true>

**Ali Masri, Karine Zeitouni, Zoubida Kedad and Gabriel Kepekian. Link++: A flexible and customizable tool for connecting RDF data sources. ESWC2016**

[https://doi.org/10.1007/978-3-319-47602-5\\_22](https://doi.org/10.1007/978-3-319-47602-5_22)

**Fatima Abdallah, Hassan Sbeyti, Ali Masri, Malak Khreis, Hussein Hazimeh, Mohamed Dbouk, and Ahmad Fadlallah: unified Sensor interface for Context-Aware Mobile aPplications (SCAMP). The Lebanese Association of Advanced Sciences LAAS20**

**Hamid Mcheick, Raef Mousheimish, Ali Masri, Youssef Dergham: Context Aware Collaborative Computing Model for Natural Disaster Management Systems. HCI (21) 2014: 439-449**

[https://doi.org/10.1007/978-3-319-07788-8\\_41](https://doi.org/10.1007/978-3-319-07788-8_41)

## LANGUAGE SKILLS

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Mother tongue(s):

**Arabic**

**English**

**LISTENING: C2 READING: C2 WRITING: C1**

**SPOKEN PRODUCTION: C1**

**SPOKEN INTERACTION: C1**

**French**

**LISTENING: A2 READING: A2 WRITING: A2**

**SPOKEN PRODUCTION: A2 SPOKEN INTERACTION: A2**