# Raúl Maldonado

⌂ Heverlee 3001 – Leuven – Belgium

📱 +32 456 18 46 77 ● ✉ maldonadoraulqro@gmail.com

 freekfield.github.io ● sweetpotatopulus ● in maldonadoraulqro

*Currently studying the Advanced Master of Artificial Intelligence program at the KU Leuven with an expected graduation date in August 2020. Strong background in Statistics, Mathematics, and Python programming with over 3 years of experience as a Data Scientist, Business Analyst and Team Leader.*

## Experience

**RiskConcile:** *Internship Based Master's Thesis*　　　　　　　　　　**Oct 2019 - Now**

*Calibration of financial models using ANN/GPUs to get state-of-the-art performance.*　　*Leuven, Belgium*

- Used tensorflow2 to design and program the architecture of a neural network using custom-defined layers and a training pipeline with model checkpoints and ternsorboard support.
- Used the VSC cluster to train the network and use it to calibrate the parameters.

**MicroTerra:** *Data Scientist and IT Team Leader*　　　　　　　　　　**Oct 2018 - Now**

*Sustainability Start-Up: Wastewater treatment systems with micro-algae.*　　*Mexico City, Mexico*

- Planned and supervised the assembly of Microterra's AWS cloud infrastructure taking weekly calls with the 3rd party company that made the development.
- Planned and led a team of 5 interns in the construction of an IoT infrastructure that included several in-house made sensor kits in the field continuously transferring data to the cloud.
- Led a team of 2 data scientists in the development of an optimization model for the operations; this included an anomaly detector and a ML model of the behavior of the bioreactors.

**Black Trust:** *Data engineer & Data Scientist*　　　　　　　　　　**Jun 2018 - Dec 2018**

*Risk assessment company: Assistance in human resources acquisitions.*　　*Mexico City, Mexico*

- Created many web scraping pipelines, ETL systems and APIs to populate and consume our databases.
- Implemented a statistical and ML model to calculate the risk of a given hiring.

**Lemon Analytics:** *Founder & Data Scientist*　　　　　　　　　　**Aug 2017 - Aug 2018**

*AI startup: AI solutions for our clients (mainly retail stores and construction sites).*　　*Mexico City, Mexico*

- Met with possible clients to identify their needs, roadblocks and opportunity areas.
- Adapted several ANNs (transfer learning) to create state of the art solutions.
- Engaged in meetings with clients and stakeholders from cross-functional teams to deploy our final products.

**Intelimetrica:** *Data Engineer & Data Scientist*　　　　　　　　　　**Aug 2016 - Jun 2017**

*A business intelligence company focused on real estate.*　　*Mexico City, Mexico*

- Improved the performance of the ML model of the company by testing and implementing a stratified clustering algorithm on top of it.
- Optimized a client's delivery system by developing a ML model from scratch and performing AB testing on their daily operations.
- Implemented an outlier detection model for house prices, several ETL pipelines with unit testing.

**INDI:** *(Internship) Control Engineer*                                        **Jan 2016 - Jul 2016**
*Worked on the creation of a lower-body exoskeleton and proposed a modification*
based on stacked controllers to improve smoothness on the movements.                      *Monterrey, Mexico*

**Fraunhofer Institute:** *(Internship) Mechatronic Engineer*                    **Jul 2014 - Dec 2014**
*Helped implementing the vision system of a Sorting Machine.*                              *Karlsruhe, Germany*

## Projects and Awards

**National Geographic: Early Grant**                                             **Aug 2019 - Now**
*Awarded a grant to implement my proposal of an image recognition based*
software that detects hypertrophication using satellite and drone imagery.                *Irapuato, Mexico*

**SOAlliance: Ocean Leadership Summit, Oslo 2019**                               **Oct 2019**
*Formed a team of 5 leaders to design a plastic pollution solution from scratch.*         *Oslo, Norway*

**Nextcanada:** *NextAi's Accelerator Finalist*                                  **Sep 2017 - Feb 2018**
*Proposed and prototyped a product that matches Tenants and Landlords*
as a response to Toronto's housing crisis caused by Airbnb.                                *Toronto, Canada*

**IBM Watson: Hackathon 3rd Place**                                              **Jul 2017**
*Programmed and showcased a CNN-based video analyzer for emotions recognition.*           *Guadalajara, Mexico*

**Trinity:** *The Cryptocurrencies Trading Bot*                                  **2017**
*Programmed a Telegram bot that could trade cryptos with text messages assisted by an AI.*

**Robochallenge: Self-Driving Drone 1st Place**                                  **Aug 2015 - Dec 2016**
*Led the winning team in the world cup for the best self-driving air-drone.*              *Bucarest, Romania*

**MIT: Micro and Nano Fabrication Techniques Course**                           **Summer 2015**
*Appointed as a young leader to work on the MTLabs at the MIT.*                            *Massachusetts, U.S.A.*

## Articles

Hybrid Modelling And Simulation Of An Inverted Pendulum Using Discrete State Space Analysis.
White Paper: CryptoAds - A Decentralized Advertising System.
Clustering Algorithms In The Delivery System.

## Education

**KU Leuven**                                                                    **Leuven, Belgium**
*MS Artificial Intelligence.*                                                    *Sep 2019 – Aug 2020*

**Tecnológico de Monterrey**                                                     **Monterrey, México**
*BS Mechatronic engineering.*                                                    *2011 – 2016*

Professional training...............................................................................................

- o **Deep Learning Specialization,** (Online) DeepLearning.ai and NVIDIA DLI.
- o **Machine Learning Nanodegree,** (Online) Udacity.
- o **SQL Data Management, Warehousing And Processing,** (Online) Udacity.
- o **Test Driven Development With Python,** (Online) Packt E-Learning.
- o **Block Chain & Reinforcement Learning,** (Online) School of AI.
- o **Automotive Engineering Specialization,** HWAtech, Berlin, Germany.
- o **Renewable Energy Program,** HsKa, Karlsruhe, Germany.

## Languages

**Spanish** (Native), **English** (IELTS 7.5), **German** (A2)

# Technical Abilities

| Technical Skills | | |
|---|---|---|
| Software | Experience (Years) | Level |
| Python | 4 | Advanced |
| Git, pip, conda | 4 | Advanced |
| SQL | 3 | Advanced |
| Scipy stack (Pandas, Numpy, Sklearn) | 3 | Advanced |
| Tensorflow | 2 | Inermediate |
| AWS | 2 | Intermediate |
| Java | 1 | Intermediate |
| Docker | 1 | Basic |
| Solidity | 1 | Basic |
| Go | 1 | Basic |

References available upon request.