# Isabel María Villalba Jiménez

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## SKILLS

### DATA SCIENCE

- Statistical analysis
- Supervised learning
- Unsupervised learning
- Reinforcement learning
- Deep learning

### PROGRAMMING LANGUAGES

• Python • Matlab • R
• LaTeX • C++ • CSS

### OTHER

• Scikit-learn • Pandas • Numpy
• Matplotlib • Seaborn • ggplot
• Tensorflow • Ipython-notebook
• Amazon Web Services (AWS) EC2
• Linux • Ubuntu • GitHub

## LANGUAGES

| | |
|---|---|
| Spanish | native |
| English | full-proficiency Cambridge Certificate in Advanced English - CAE (C1) (2012) |
| French | basic |

## EDUCATION

### DATA ANALYST NANODEGREE

Udacity facebook mongoDB , November 2016 - in progress

### MACHINE LEARNING ENGINEER NANODEGREE

Udacity Google , July 2016 - November 2016

### MSC IN PHOTONICS

Polytechnic University of Catalonia (UPC) 2013-2014
Institute of Photonic Sciences (ICFO), UAB, UB

### TELECOMMUNICATION ENGINEERING (BSC + MSC)

University of Malaga 2005-2012

### COURSES

#### MACHINE LEARNING COURSE

Andrew Ng
Stanford University Coursera 2016
Certificate: https://www.coursera.org/account/accomplishments/certificate/BDUV2MJT2P7T

## PROJECTS

### UDACITY GOOGLE | Machine Learning Nanodegree

- **Right Whale call recognition using Convolutional Neural Networks -** ***source*** *November 2016*
  -- Training of Convolutional Neural Networks (ConvNets) models widely used for character recognition (LeNet5) for audio recognition.Detected up-calls with 0.95 Area Under the Curve (AUC).
  -- Tensorflow, scikit-learn, python, pandas, numpy, csv, matplotlib
- **Building a Student Intervention System -** ***source*** *July 2016*
  -- Analysis of high school students dataset to plan interventions
  -- Optimized supervised learning algorithms. Tuned logistic regression model using 'grid_search' and 'make_scorer'
  -- Logistic regression, Support Vector Machines, Decision trees, scikit-learn, python, pandas, numpy, csv
- **Creating Customer Segments -** ***source*** *August 2016*
  -- Analysis of customers annual spending on diverse product categories
  -- Implemented feature scaling and detected outliers. Applied principal component analysis (PCA) and dimensionality reduction
  -- k-means, scikit-learn, python, pandas, numpy, csv, matplotlib

## EXPERIENCE

### PREDOCTORAL RESEARCHER

Optical Communications Group (GCO)
Polytechnic University of Catalonia (UPC) - October 2015 - present | Barcelona

- Developed Python and Matlab scripts for simulation of optical devices
- Simulated wavelength shifter for optical networks units with a rejection on 54dB of the side band
- Researched in optical communications systems
- Designed new devices for highly efficient networks