

# David Charte

Data scientist

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## Skills

Data scientist with expertise in unsupervised and supervised deep learning, image processing, classification problems and a strong mathematical foundation.

Learns fast · Loves teaching · Team player · Organized and meticulous

**Speaks** Spanish (native) · English (advanced) · French (intermediate) · Swedish (basic)

## Technologies

**ML** Tensorflow · Keras · Pytorch · Scikit-Learn · Apache Spark · NVidia CUDA · Microsoft AzureML

**Languages** Python · R · Ruby · C++ · C · Shell · SQL **Web** HTML · JavaScript · CSS · RWD · Vue.js

**Systems** Linux/UNIX · Docker · NGINX **Tools** Git · GitHub ·  $\LaTeX$  · VSCode

## Experience

- 2018–present **PhD candidate**, University of Granada, supervisors: Francisco Herrera & Francisco Charte.  
Lecturer training contract under government-funded program ref. FPU17/04069, defending thesis soon.
- Main topic: *Finding alternative representations for data through deep learning techniques*
  - Published 10 JCR journal articles (7 in Q1) and 7 software packages
  - Collaboration: **Repsol**, optimization of refinery processes (machine learning and autoencoders)
  - Collaboration: **ArcelorMittal**, [semantic segmentation of metallographic microstructures](#)
  - Directed bachelor's thesis: Automatic melody synthesis with Google Magenta
  - Directed bachelor's thesis: Neural search for COVID-19 detection in chest X-rays
  - Published [a 5-part free online course](#) (in Spanish) on linear algebra and dimensionality reduction
- 2020–present **Online course author and lecturer**, CampusMVP, Spain.  
Course on Data Science and Machine Learning using Python and R, with video-based and written lectures
- 2018 **Researcher**, University of Granada, Spain.  
Contract with BBVA-funded project *BigDaPTOOLS*. Development of data preprocessing libraries in R
- 2016–2018 **Undergraduate researcher**, University of Granada, Spain.  
Analysis of unsupervised deep learning techniques, extraction of multi-view models for supervised learning

## Education

- 2017–2018 **M.Sc. in Data Science and Computer Engineering**, University of Granada, Spain.
- 2012–2017 **B.Sc. in Computer Science**, University of Granada, Spain: **9.40/10**.
- Graduated with best academic record in class
  - Co-founded [LibreIM](#), a student community for Mathematics and Computer Science
- 2012–2017 **B.Sc. in Mathematics**, University of Granada, Spain: **9.04/10**.
- 2017 **Intl. Summer School on Deep Learning**, Deusto University & Rovira i Virgili University.
- 2014 **A practical approach to Data Science and Big Data**, Intl. University of Andalusia (UNIA).
- 2007–2012 **Project for detection/stimulus of mathematical talent (ESTALMAT)**, SAEM-Thales, Spain.

## Projects

- 2021 **Slicer (convolutional)**, Convolutional autoencoder model for complexity reduction.  
Tensorflow implementation of a convolutional autoencoder which learns from labels with an SVM loss.
- 2017 **Cometa**, The comprehensive multi-label data archive.  
Docker container that deploys an automatized web repository to prepare and host multi-label datasets.
- 2016 **Ruta**, Software for unsupervised deep architectures.  
R package for training unsupervised Deep Learning models.