## Ricardo Mokhtari

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Languages & Frameworks: Proficient: Python (PyTorch, pandas, numpy, matplotlib, seaborn, sklearn, PIL), SQL, MATLAB/Simulink, Git, LaTeX Familiar: TensorFlow/Keras, Java, C++, JavaScript, ReactJS

Technical Skills: Regression (Linear, Multiple Linear, Polynomial, SVR, Random Forest), Classification (K-NN, SVM, Random Forest, Naïve Bayes, CNN), Clustering (K-Means, Hierarchical), Deep Learning (CNN, GAN), PCA, Reinforcement Learning, Web Scraping, Cloud Computing

#### Education

### Imperial College London Molecular Bioengineering (MEng) 2017 – 2021

- Current grade: First (74% average)
- Relevant modules:
  - Probability & Statistics
     (Hypothesis Testing, Bayesian Statistics, t-test, ANOVA)
  - Mathematical Modelling (ODE models, Stochastic Processes, Markov Chains, Networks)
  - Mathematics (Vector Calculus, Linear Algebra, Differential Equations)
  - Signal Processing
  - o Reinforcement Learning

## Charterhouse School 2012 – 2017

A-Level/Pre-U: A\* A\* A A

• **GCSEs:** 11 A\*s

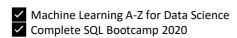
### Other Skills & Interests

#### **Hackathons**

**IC HealthHack '20** – Built an ML-enabled mental health companion app, awarded runner-up prize

IC Hack '20 – Built a web platform to help children learn Python by making games IC HealthHack '19 – Built a wearable posture monitoring device to dynamically analyse posture and prevent spinal injury

#### **Independent Learning – Udemy Courses**



## Spoken Languages

English (Native) Spanish (Advanced) Portuguese (Basic)

#### **Public Speaking**

Given presentations on Deep Learning and AI safety to Audiences of 100+.

### **Work Experience**

# Advanced Data Science Team, Imperial College London Data Scientist (part-time)

November 2020 - Present

- Data Science research project in partnership with Refinitiv, Inc.
- Working in a team of 3 (scrum agile) developing a data-driven method of automatically updating web crawlers for autonomous data extraction
- Mentored closely by research fellow at the Data Science Institute
- Technologies: scrapy, Abstract Syntax Trees, Reinforcement Learning

## Biological Control Systems Lab, Imperial College London Research Assistant | Deep Learning Research

June – November 2020

- Researched the use of Generative Adversarial Networks (GANs) as a data augmentation technique for improving a bespoke classifier for medical diagnostics
- Personally, handled anonymised patient data from a clinical trial
- Deployed the Pix2Pix model in TensorFlow, wrote extensive pre-processing code
- Developed complex data pipelines, used rigorous model evaluation frameworks

### **Projects**

### **Data Science Project Portfolio**

ricardomokhtari.github.io/Data-Science-Projects/

July 2020 - Present

- In my free time I analyse open-source data and share my analyses publicly on my website
- Projects include:
  - Predicting the quality of a film using a classifier achieved >70% accuracy
  - o Predicting US house prices using regression achieved an RMSE of 0.13
  - Clustering mall shoppers based on their spending behaviour identified 5 unique shopper groups

#### Data Augmentation Using Generative Models Project Lead | Deep Learning Research

October 2019 – June 2020

- Led a team of 6 engineers researched the use of generative models (VAEs) for improving a clinical image classification pipeline
- Implemented Convolutional Neural Networks from scratch in PyTorch
- Coordinated and delivered technical presentations to audiences unfamiliar with our work
- Invited to extend project as a member of the research group

# Algothon 2019 with BlackRock Data Science Hackathon

November 2019

- Worked in a team of 4 built an AlphaGen model based on social media analytics and stock price volatility
- Worked with proprietary real-world datasets applied thorough pre-processing and data cleaning techniques, applied random forest regression model
- Persevered to final day and presented insights to BlackRock's ML researchers