

# David Pérez Carrasco

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Leveraging analytical and critical thinking skills, I develop impactful Machine Learning models through rigorous research in the field of AI. Committed to perfection, I relentlessly pursue optimal solutions. Ambitious, detail-oriented, and determined, driven to excel in AI/ML research at a world-leading company.

## WORK EXPERIENCE

### AI & ML Researcher at Universitat Pompeu Fabra | Internship

Barcelona, Spain

Jul 2023 - Apr 2024

- Developed a simulator for sequential decision-making problems, enabling the representation of deterministic actions.
- Implemented state-of-the-art Reinforcement Learning for linearly solvable MDPs, benchmarking efficacy and scalability in complex decision frameworks.

## EDUCATION

### Universitat Pompeu Fabra - Mathematical Engineering in Data Science

Barcelona, Spain

Sept 2020 - Jun 2024

Undergraduate Thesis: Novel Algorithms for Linearly Solvable Markov Decision Processes  
Grade: 8.63 | Honors: Introduction to Programming, Introduction to Network Science, Discrete Mathematics, Data Structures & Algorithms, Object-Oriented Programming, Algorithm Design, Probabilistic Graphical Models, Information and Codification Theory.

### University of British Columbia – Exchange Program

Vancouver, Canada

Sept 2022 - Dec 2022

34<sup>th</sup> best university worldwide according to 2023 [QS ranking](#) and 19<sup>th</sup> in Data Science.

Coursework: Relational Databases (A), Machine Learning and Data Mining (A-), Finding Relationships in Data (A-) and Artificial Intelligence (B).

### Academica International Studies - American High School Diploma

Miami, United States

Graduated with honors.

Sept 2016 - Jun 2020

## PROJECTS

### Hierarchical Deep Learning Model for Anomaly Detection | Python (Pytorch, Streamlit)

Dec 2023

- Developed and trained a Transformer-LSTM based hierarchical model for anomaly detection, consumption pattern recognition and prediction using time series data.

### SRGAN for Image Super Resolution | Python (Pytorch, Numpy)

Jun 2023

- Boosted image quality by 4x and reduced noise through SRGAN implementation.

### Deep Learning for Cryptanalysis | Python (Pytorch, Pandas, Numpy)

May 2023

- Decoded corrupted files implementing, training and testing CNNs and LSTMs.

### Apache Spark for Big Data – Tweets filtering | Apache Spark, Maven, AWS (S3 & EMR)

Apr 2023

- Filtered real-time tweets with parallel computation and cloud computing storage.

### Relational Database – Football in Data | SQL, PHP, JavaScript, Oracle

Nov 2022

- Developed and deployed a football relational database alongside public webpages, employing precise SQL queries, PHP scripting, JavaScript and Oracle.

### Machine Learning for Customer Segmentation and BI | Python, Excel

May 2022

- Prepared IoT data and trained machine learning models for customer identification.

## ACHIEVEMENTS

### Finalist in the 2023 AB Data Challenge

Barcelona, Spain

Dec 2023

- Predicting water consumption and detecting anomalies with a DL Meta-Model.

### Contestant at the 2022 IPCP Southwestern Europe Regional Contest

Milan, Italy

Apr 2022

- Solved several programming problems representing the UPF.

## SKILLS

**Technical skills:** SQL, Excel, Python, R, MATLAB, Tableau, Java, JavaScript, C/C++, Julia, PHP, AWS, GraphML, Agile, Jira, Amazon Cluster, Maven, Apache Spark, MPI, Cuda, RDS, Hadoop, Linux, Git.

**Languages:** Spanish (Native), Catalan (Native), English (C1 – Cambridge English | February 2022).

## HONORS & AWARDS

- Academic distinction issued by the Catalan Government for my outstanding results in PAU.
- Placed in the honor roll for my outstanding academic performance in 2018-2019 academic year.