

Carles Trullàs

Data Scientist

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Profile

Mathematics graduate with a Master's in Advanced Mathematics and solid skills in programming, analytical thinking, and modelling. Ranked first in class throughout high school, university, and graduate studies, showcasing strong motivation and achievement. Currently building a career in Data Science while pursuing a Master's in the field to strengthen both theory and practice.

Education

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| MSc | Universitat Oberta de Catalunya , Data Science | Sept 2023 – Present |
| | <ul style="list-style-type: none">Pursuing a Master's degree that directly complements and enhances my professional experience. | |
| MSc | Polytechnic University of Barcelona , Advanced Mathematics and Mathematical Engineering | Sept 2022 – June 2023 |
| | <ul style="list-style-type: none">The final qualification of the master's degree is 9.8 (best of the promotion).Awarded with 6 Honorable Mentions, including Master's Thesis. | |
| BSc | Autonomus University of Barcelona , Mathematics | Sept 2018 – June 2022 |
| | <ul style="list-style-type: none"><i>Extraordinary award</i> for the best academic record of the promotion.Awarded with 10 Honorable Mentions, including BSc final Thesis. | |

Experience

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| UVE Solutions , Data Scientist | Manresa, Spain |
| <ul style="list-style-type: none">Designed and deployed an AI-powered search engine capable of finding Points of Sale with photos and reviews most similar to a given image or short text input.Delivered client-focused analytics to identify high-potential points of sale, supporting international companies in optimizing their commercial strategies.Collected data from multiple sources via scraping and performed ETL processes to produce clean, structured datasets ready for analysis and decision-making.See <i>Expertise Areas on Data Science</i> for technical details. | Sept 2024 – Present |
| Autonomus University of Barcelona , Assistant Lecturer (Faculty of Mathematics) | Bellaterra, Spain |
| <ul style="list-style-type: none">Taught courses in Statistics, Differential Equations, Linear Algebra, and Calculus. | Sept 2023 – Aug 2024 |
| Center of Mathematical Research (CRM) , Scholarship | Bellaterra, Spain |
| <ul style="list-style-type: none">I received a scholarship to work on my master's thesis in advanced mathematics. | Jan 2023 – Aug 2023 |
| Group on Dynamical Systems, UAB (GSDUAB) , Research Intern | Bellaterra, Spain |
| <ul style="list-style-type: none">Intern at the <i>Group on Dynamical Systems of UAB</i>, which belongs to the Mathematics Department at the Autonomous University of Barcelona. | July 2021 – Sept 2021 |

Honors & Awards

Best Academic Record, Master's Degree in Advanced Mathematics	July 2023
Extraordinary Award, Bachelor's Degree in Mathematics	July 2022
Honorable Mention, Spanish Baccalaureate	June 2018

Technologies

Programming: C, C++, R, Python, PySpark, Spark, SQL.

Microsoft Azure Ecosystem: Data Factory, Databricks, Azure Storage, Microsoft SQL Server & Azure Cosmos DB.

Vector DB: PostgreSQL.

Version Control & Repositories: Git, GitHub, Bitbucket.

Machine Learning & AI Platforms: Hugging Face.

IDEs: VS Code, Cursor, GitHub Copilot.

Data Engineering Tools: Docker, Kubernetes, Lens, Azure DevOps, Kibana (Elastic), RabbitMQ, FastAPI.

Project Management & Agile: Scrum, Agile Methodologies, Jira, Atlassian Ecosystem, Notion, Kanban.

Expertise Areas on Data Science

Search AI Engine: Designed and deployed an *AI-powered search engine* capable of finding Points of Sale with photos and reviews most similar to a given image or short text input.

- Applied CLIP models (e.g., *SigLIP*, *Jina*) to generate embeddings for images and reviews.
- Utilized *GPUs* to accelerate embedding computation and *vector databases* (*PostgreSQL* + *HNSW indexing*) for efficient similarity search.
- Deployed a *production-ready API* on *Kubernetes* to integrate the AI search engine with the company's main platform, making it accessible to users.
- Developed an internal *Streamlit-based frontend* for the Data Science team, also used for client demos.

Web Scraping: Designed and maintained robust scrapers to extract information from multiple websites using Python libraries such as *BeautifulSoup* and *Selenium*. Ensured scalability, reliability, and adaptability to website changes.

Data Pipelines & ETL: Designed and implemented complex *ETL pipelines* to process large volumes of raw data into clean and structured datasets. Leveraged tools such as *Azure Storage*, *Azure Data Factory*, *Databricks*, and *Azure Cosmos DB* to orchestrate and optimize workflows.

Client Ad-hoc Projects (CPG sector): Developed tailored analytics solutions for international clients in the *Consumer Packaged Goods (CPG)* industry. Built ML models (*Linear/Logistic Regression*, *Naive Bayes*, *Decision Trees*, *XGBoost*, *Neural Networks*, *Clustering*, etc.) to identify Points of Sale (PoS) with the highest potential or specific characteristics, supporting commercial strategy.

Publications

Quadratic differential systems with a WF1 and a finite saddle-node	August 2023
<i>International Journal of Bifurcation and Chaos</i> . Joan C. Artés & Carles Trullàs	

Languages

Catalan and Spanish: Native proficiency.

English: Full professional proficiency.