



Nil Crespo Peiró

Data Scientist and Computer Vision Researcher applying AI to sports, combining academic research with industry experience. Currently working at **Deutsche Sporthochschule Köln** as a PhD researcher, developing AI-driven tracking solutions for 3x3 basketball, and at **AiBall**, where I refine computer vision algorithms to track players and the ball in padel.

My work bridges deep learning, sports analytics, and software development. Passionate about leveraging **machine learning and computer vision** to enhance sports insights, unlock new ways to analyze the game and provide creative solutions to every challenge encountered. Driven by curiosity, I am always open to new projects where I can demonstrate the relevance of data.

Barcelona, Spain

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Work Experience



Researcher & PhD Candidate • Deutsche Sporthochschule Köln

September 2024 - Present

- **Achievements/Tasks:**

- Developing and improving deep learning and machine learning algorithms for automated player and ball tracking in 3x3 basketball
- Leveraging computer vision to extract player trajectories and game events from single-camera video setups
- Collaborating directly with analysts and coaches from the German Basketball Federation (DBB) to design analytics solutions addressing real-world performance and tactical questions
- Leading the creation of the first large-scale open-source tracking dataset for 3x3 basketball, aimed at enabling reproducible research and applied sports analytics
- Advancing applied sports AI research across multiple sports, including basketball, ping-pong, cricket, and golf



Visual Computing Developer • Arcvi - aiball

December 2022 - Present

- **Achievements/Tasks:**

- Enhanced and executed computer vision deep learning pipelines on AWS, leveraging GPU-enabled instances for scalable player and ball tracking in padel
- Improved tracking accuracy and computational efficiency through model optimization and pipeline refinement
- Designed and structured internal data systems, managing large volumes of tracking data using Amazon S3
- Developed web-based dashboards for data visualization and operational reporting.
- Implemented camera calibration techniques and automated alerts to detect unwanted camera movements.
- Integrated multiple reservation providers into our system, automating bookings across different platforms



Data Scientist • Hewlett-Packard (HP)

September 2021 - April 2023

- **Achievements/Tasks:**

- Parsed highly unstructured data, to extract business value
- Designed and Managed complex Data Flows
- Used predictive algorithms to increase the revenue of the company



Data Analyst • Ball&Stats

October 2022 - December 2023

- **Achievements/Tasks:**

- Developed a scraping algorithm to extract and update all game data from the basketball teams of the FEB (Spanish Basketball Federation)
- Created a structured relational database schema
- Helped design and create personalized visualizations to fit each team's needs



Lead Data Analyst • Barcelona Dragons

April 2022 - September 2023

- **Achievements/Tasks:**

- Created a data warehouse to store the advanced statistics collected at games
- Led analytics initiatives with coaching staff, translating advanced metrics into tactical game improvements
- Developed pre-game analysis by using the recorded KPI's



Artificial Intelligence Intern • BaseTIS

March 2021 - July 2021

- **Achievements/Tasks:**

- Worked with various ML ranking and recommendation algorithms
- Developed an NLP algorithm to find similar and relevant tweets through an API

Projects

Personal Projects • Nil



- **Canadian National Basketball Team:**

- Designed multiple visualizations to help in pre- and post-game analysis for the upcoming Summer Olympics in Paris 2024
- Created a website to centralize all scouting information of other teams

- **Bachelor Thesis - Surgical Video Analysis Tool:**
 - Created a visual tool that aimed to facilitate the learning process of surgeons and resident doctors by means of different tools which allowed the users to get more insights into their surgical operations.
 - LinkedIn Post: <https://t.ly/HUen>

- **"El Mundial de los Datos" - Bringing World Cup Data Closer to the Fans**
 - I took part in a project in collaboration with BePro and Sports Data Campus to analyze, visualize and summarize the games of the World Cup using their data in conjunction with our analysis.
 - Post: <https://t.ly/1Kd6>

- **BUEStats 2.0 - A web application designed to make Spanish Basketball Stats more accessible**
 - A scraping app that extracts data from any team in the top Spanish leagues for Women's and Men's basketball and lets users play, download, and visualize data from the selected team.
 - Features:
 - Downloading Data
 - Visualizing Game Shots
 - Team Data Exploration
 - Head to Head
 - Ranking (based on a variable) of Team and League
 - Scouting other teams
 - Similarity tool for players
 - <http://www.buestats2.com>

- **Web Application for NBA-related Analysis:**
 - Created various studies combining Machine Learning algorithms and visualization to inform, explore and answer some questions about the NBA.
 - **Topics:**
 - Finding underpaid/overpaid players
 - Predicting the league's future stars
 - Analyzing scoring trends.
 - <https://nilcrespo-bball-ds-dashboard-jhc9eu.streamlit.app/>

Education

2022 - 2023



UCAM - Universidad Católica San Antonio de Murcia

Master - Artificial Intelligence Applied to Sports

2020 - 2021

ERASMUS - Technische Universität Darmstadt

Bachelor - Computer Science



2017 - 2021

UPC - Polytechnical University of
Catalonia

Bachelor - Data Science & Engineering



Skills

- **Programming Languages**
 - **Python** (Pandas, Scipy, Numpy, SciKit, Keras...)
 - **SQL, R, MATLAB**
- **Back-End Experience** (Django, Flask...)
- **Machine Learning Models Implementation**
 - GLMs, Neural Networks, Time Series, K-Means...
- **Computer Vision Experience**
- **Basic Web Development**
 - JS, HTML, CSS
- **Dashboard Creation**
 - Streamlit, Dash, PowerBI, Tableau
- **Git Version Control & MS Office**
- **Verbal and Written communications for transmitting data analysis results**

Languages

- **Catalan** — Native or Bilingual
- **Spanish** — Native or Bilingual
- **English** — Advanced Certificate (C1)
- **German** — Goethe Institut Certificate (B2)

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