



# Gerard Caravaca Ibañez

## AI engineer

### PROFILE

With a Master's in AI from Catalonia's top universities and experience in deep learning research and startup development, I'm poised to contribute significantly to AI advancements. My background combines academic rigor with practical tech application, making me an ideal candidate for roles requiring innovation and expertise in AI. I am especially interested in projects that work with computer vision and/or NLP technologies.

### DETAILS

Barcelona, Spain  
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### LINKS

[Linkedin](#) [Portfolio](#)  
[Master thesis](#) [Published article](#)

### EMPLOYMENT HISTORY

#### Deep learning research, SISCOM research department of UPC, Barcelona

FEBRUARY 2023 — PRESENT

Development of deep learning models for the recognition of human activity through movement sensors. With the aim of developing an analysis tool ([MobilitApp](#)) for improving urban mobility in the city of Barcelona.

#### Responsibilities:

- Led the groundbreaking analysis of transport mode recognition, identifying the most advanced and robust techniques to set a new standard in the field.
- Integrated state-of-the-art deep learning methodologies (RNN, CNN) with classical techniques such as frequency analysis via Fast Fourier Transform (FFT), elevating the project's analytical capabilities.
- Creation and maintenance of a multimodal trips dataset for the metropolitan area of Barcelona.
- Launched a highly efficient Android application for seamless data collection and testing, drastically improving human activity recognition systems with innovative features.
- Facilitated dynamic collaboration between the testing team and key stakeholders including the Metropolitan Transportation Authority (ATM) and UPC Sostenible.
- Achieved the reduction of the application size from 500MB to 30MB by quantization of the machine learning models.

#### Tools:

Python - R - C++ - TensorFlow - PyTorch - Numpy - Scikit-learn - Pandas - Andorid Studio - Kotlin - TensorFlow Lite - Github - LaTeX

#### Full stack developer, Blava, Healthy spaces, Barcelona

FEBRUARY 2022 — JUNE 2022

Back end and front end development of a website for the management and analysis of environmental data from sensors, for subsequent comparison with the sustainability objectives of miagenda2030.

#### Responsibilities:

- Drove the strategic optimization of a target management system for Spanish public entities, ensuring alignment with environmental benchmarks and efficiency standards.
- Architected a robust and efficient system infrastructure.
- Crafted and deployed clean, scalable UI components, prioritizing accessibility and adherence to best practices.
- Assist and actively participate in meetings, whether from the Product team or the Implementation team.

#### Tools:

Laravel - Vue.js - SQL - Github - Postman - Figma - Jira

## Research Intern, Hospital Clínic de Barcelona, Barcelona

JANUARY 2022 — JUNE 2022

Development of my degree thesis in the creation of a system for analysis and representation of cancer and pollution data in Europe. The ultimate intention of the project is to demonstrate that air pollution causes increased lung cancer mortality.

### Responsibilities:

- Conducted an in-depth study in the realm of lung cancer medicine, incorporating advanced statistical methods to uncover correlations.
- Constant contact with the best doctors specialized in the field in a hospital medical team. With the intention of adjusting the system to the requirements of the medical team.
- We successfully developed a system with a dashboard interface which has been used for the development of a published article.

### Tools:

Python - Dash Plotly - Scikit-learn - Pandas - MongoDB - Github

## EDUCATION

### Computer Science, FIB Faculty of Computer Science of Barcelona, Barcelona

SEPTEMBER 2018 — JUNE 2022

- High computing modality.
- Focus on Artificial Intelligence, Algorithmics, Computer Logic, and Computer Graphics.
- Average mark: 8.15.
- Honors in Probability and Statistics.

### Master's Degree in Artificial Intelligence, FIB Faculty of Computer Science of Barcelona, Barcelona

SEPTEMBER 2022 — JANUARY 2024

- Focus on Deep Learning, Reinforcement Learning, Computer Vision and NLP.
- Average mark: 8.6.
- Courses entirely in English.

## LANGUAGES

- Spanish - Native
- Catalan- Native
- English- C1

## SOFT SKILLS

- Effective Communication
- Team Collaboration
- Independent Learning
- Time Management
- Innate Motivation
- Responsibility and organization
- Problem-Solving
- Highly adaptable

## REFERENCES

References available upon request