Civil Engineer · Master's in Transport, Territory and Urban Planning
R&D Researcher · Doctoral Researcher at the University of Castilla-La Mancha

David Alejandro Ramírez Cajigas



Citizenship: Spanish and Colombian
Phone: +34 613 93 03 77
Email: ingdavidramirez94@gmail.com
LinkedIn: David Alejandro Ramírez Cajigas
Location: Spain · Category B driving licence

Professional Profile

Civil engineer with professional recognition in Spain as an **Ingeniero de Caminos, Canales y Puertos**, a master's degree from UPV and research experience at UCLM, where I am pursuing a PhD. I develop algorithms and digital tools for transport planning and assessment, data analysis and engineering problem-solving. My experience combines applied research, optimisation, geospatial analysis, project evaluation and construction supervision. I have developed original software and contributed to publications and international conferences.

Focus: Applied research, software development, optimisation and territorial analysis.
Membership: No. 37028, Colegio de Ingenieros de Caminos, Canales y Puertos.
Languages: Spanish: native; English: B2.

Education and Professional Recognition

2023 – ongoing
PhD in Territory, Infrastructure and Environment

- University of Castilla-La Mancha. Genetic algorithms for demand-responsive transport with time windows, applied to rural mobility in Campo de Montiel.

9 May 2025
Professional Recognition in Spain

- Recognition of my civil engineering degree for the regulated profession of Ingeniero de Caminos, Canales y Puertos.

Degree awarded: 2022
Master's in Transport, Territory and Urban Planning

- Universitat Politècnica de València. Studies completed in December 2021. **Master's thesis (10/10):** development of DGIS, a public transport accessibility tool.

2012 – 2018
Degree in Civil Engineering

- Pontificia Universidad Javeriana, Cali. Final project on route distribution in the MIO transport system and perceived service quality.

Additional Training

2025 · Universidad Politécnica de Madrid
Expert Programme in Transport Digitalisation Technologies and Tools

- Training in digital tools applied to transport.

2022 · University of Calgary, Canada
English as a Second Language

- Two 275-hour programmes: **550 hours in total**.

2019 – 2023
Programming and Engineering Tools

- MATLAB Onramp, MathWorks (2023); Airport Engineering: Airside Design, UPValenciaX (2020); basic Revit Architecture, UPV (2019).

Engineering and R&D Experience

2023 – present
R&D Researcher · University of Castilla-La Mancha / Mob&UP

- Algorithm development for demand-responsive transport services in Castilla-La Mancha. Route optimisation with time constraints and assessment of alternatives through travel times, costs and emissions. In the EsMaaS project, analysis of rural mobility and territorial structures using mobile phone data, GIS and statistical clustering. Python and MATLAB programming, routing and dissemination of research findings.

2021 · Independent projects, Cali
Civil Engineer

- Management and supervision of residential construction, drawing reviews, progress monitoring and quality control.

May 2016 – Mar 2019 · Productivos.org
Founding Member · Technical Development

- Programming and maintenance of a free business education platform. Support for business diagnostic tools, investment project evaluation and user assistance.

Dec 2016 – Jun 2017 · Constructora Bolívar
Civil Engineering Internship

- Support to the site engineering team on residential projects: materials, technical specifications, quality control and coordination with contractors.

Projects and Publications

DGIS · Original MATLAB Software. Development of a tool to assess public transport accessibility, applied to Santiago de Cali. Documentation and projects available on my website.

EURE, 51(153), 2025. Co-author of an article on rural territorial structures and transport services in Castilla-La Mancha. DOI: 10.7764/EURE.51.153.02.

Conferences. Presenter: IGC, Dublin (2024); FIT, Cercedilla (2024); EUGEO, Barcelona (2023); CIT, La Laguna (2023).

Tools: Python (pandas, GeoPandas, Jupyter), MATLAB, ArcGIS Pro, QGIS, OSRM, Docker, PTV Visum, AutoCAD, Civil 3D, Revit and Microsoft Office.