

Cristina de los Angeles DOMINGUEZ HERNANDEZ

Multidisciplinary researcher, Project manager, Data scientist, Geospatial modeller

EDUCATION

- Ph.D., ENERGY ACCESS AND SUSTAINABLE DEVELOPMENT
[ETH Zurich \(Switzerland\)](#)
10/2017 – 12/2021
 - MASTER OF SCIENCE IN PROJECT MANAGEMENT AND ENGINEERING OF ENVIRONMENT AND ENERGY
[Universidad Politécnica de Madrid \(Spain\)](#) and [Institut Mines Télécom Atlantique - Nantes \(France\)](#)
09/2015 – 07/2017
 - BACHELOR OF SCIENCE IN CIVIL ENGINEERING
[Universidad del Valle de Guatemala \(Guatemala\)](#)
01/2009 – 11/2013
-

WORK EXPERIENCE

RESEARCH AND PROJECT MANAGEMENT CONSULTANT (Part-time, remote)

[Climate Compatible Growth Programme](#), United Kingdom

Present

- Contribution to the mathematical formulation of an integrated geospatial model applying statistical and econometrics approaches to identify infrastructure solutions that enable the largest local economic development in rural areas of developing countries.
- Contribution to develop a web-application prototype that identifies the greatest local economic benefits for the agriculture sector in Kenya, aiming at increasing the profitability of agriculture value chains.
- Management, planning, monitoring and assessment of a project that aims at supporting the energy planning in Kenya through the development of tools that integrate county-level needs into the national-level planning and facilitating the County-level interfacing on modelling data exchange.
- Co-lead of the Data Task-Force team providing solutions to monitor, improve and assess dataflows.
- Support to improving the sub-national energy planning in Kenya for integrating geospatial analytics, machine learning methods and socioeconomic constraints.

POSTDOCTORAL RESEARCHER

[Swiss Federal Laboratories of Material Science and Technology \(Empa\), Zurich, Switzerland](#)

Project: CO2-OPTIMIST, Renovated or replaced? Finding optimal solutions for the European building stock

02/2022 – 10/2022

- Co-lead of the project and responsible for the organization, and coordination with industry partners
- Estimation of the energy demand of the European building stock under different climate change and economic uncertainty scenarios applying building simulation approaches.
- Identification of optimal renovation and replacement solutions considering operating and embodied CO2 emissions.

DOCTORAL RESEARCHER/SCIENTIFIC ASSISTANT

[ETH Zurich](#) and [Swiss Federal Laboratories of Material Science and Technology \(Empa\), Zurich, Switzerland](#)

Project: Estimating the energy demand of rural households to improve energy access planning in developing countries

10/2017 – 12/2021

- Development of a data-driven geospatial methodology to forecast the energy demand of rural households in developing countries, with case studies in sub-Saharan Africa, South Asia, and Latin America.
- Application of data analytics, machine learning, econometrics, social systems modelling and other statistical approaches at different scales (household to national)
- Application of database management systems and infrastructure and integration into geospatial visualization platform

- Design, planning, and deployment of field quantitative and qualitative data collection in rural communities in Kenya, Guatemala, and Pakistan.
- Development of industry-academia collaborations to enhance real-world applications of research.
- Active knowledge sharing activities beyond academia, such as webinar and podcast sessions, publications on science blogs, organization of workshops with stakeholders such as rural villagers and local authorities.
- Supervision of 10 junior researchers in multiple international projects.

RESEARCH INTERN

[Tecnalia Research and Innovation, 1,500 employees, Derio, Bizkaia, Spain](#)

Project: MySMARTLife Lighthouse

02/2017 – 09/2017

- Assessment of pilot European cities (Nantes, Hamburg, and Helsinki) in their integrated urban transformation strategy, as part of the plan EU – Horizon 2020.
- Performance of Life Cycle Assessments (LCA), technical, financial, and socio-economic local impact analyses for different interventions of renewable energies, energy efficiency measures in buildings, smart grids, and energy storage technologies to make the European grid more sustainable.

CIVIL ENGINEER/PROJECT MANAGER

[Constructora Norberto Odebrecht, S.A., 10,000 employees, Guatemala, Guatemala](#)

Project: Maintenance and Expansion of the CA-02 Highway from Guatemala to Mexico

08/2013 – 04/2015

- Project manager and responsible of the structural design of 30 bridges, hydrological studies, budget planning, risks management and supervision of their construction on-site.

RESEARCHER

[Universidad del Valle de Guatemala, Guatemala, Guatemala](#)

Project: Development of a Prototype for Wave Energy Generation in the Pacific Coast of Guatemala

09/2011 – 11/2013

- Leader of a multidisciplinary team to develop a prototype to generate electricity from the ocean waves of the Pacific Coast of Guatemala, with the potential of providing electricity access to more than 500 households.

PERSONAL SKILLS

SOFTWARE, PROGRAMMING LANGUAGES, DATABASE MANAGEMENT SYSTEMS

Microsoft Office, AutoCAD, QGIS, ArcGIS, RETScreen, EnergyPLAN, EnergyPlus, SimaPro, R, Python, JAVA, SQL

LANGUAGES

Spanish – Mother tongue

English – Bilingual

French – Working proficiency

FELLOWSHIPS / GRANTS

2019 – Seed Money Grant (21.5K CHF) from the [Leading House for the Latin American Region](#) at the University of St. Gallen for performing fieldwork in Guatemala during March – May 2021

2015 – Selected among +700 applicants for an [Education for Sustainable Energy Development \(ESED\) full-scholarship](#) awarded by the Global Sustainable Electricity Partnership for pursuing my master's degree

Please contact me directly for an extended version and further details.