

# The professional profile of PhD-holders

**Diana PEÑA**

## Industrial Engineer | Optimization and Reliability PhD Student

I'm a second year PhD student in Optimisation and Reliability a in France in double degree within Logistics and Supply Chain Management in Colombia.

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### Core business

#### PHASE 3 Skill development

As a professor of Supply Chain and Operations Planning courses in the Industrial Engineering programme at the Universidad Icesi in Colombia and 8 years of experience in the industry and 7 years of experience in education. I identified the new trends in my sector, and for that reason I'm doing my Phd studies.

*Knows how to tap the extensive professional network that he has patiently built.  
Knows how to appoint a team of high-potential staff to work with him.  
Actively monitors new trends in both the field and the skills vital to developing new projects.  
Continually develops his managerial skills.*

#### PHASE 2 Evaluation

Recyclable waste collection routing for the informal sector (Presentation Conference and full paper). International Conference on Connected Innovation and Technology X.0 (ICCITX.0) and The Smart Healthcare International Conference (SHeIC 2024). April 22nd-24th, 2024, in three sites: Rabat, Morocco - Marseille, France - Da Nang, Vietnam. Poster presentation. Recyclable waste collection routing for informal sector. What's up Doc, April 30th, 2024.

*Knows how to regularly evaluate the progress, impact and outcomes of his staff's activities.  
Takes part in evaluating both internal and external projects.  
Is able to evaluate hypotheses and concepts lying beyond his field of expertise.  
Encourages his staff to take ownership of the evaluation process.*

#### PHASE 3 Information management

Search engine management of Science Direct, Ebsco, Scopus, etc. Comparative analysis of different bibliographic references with respect to the waste collection routing problem. Use of the Mendeley tool for document and citation management. Recognition of AI-based applications to support document management. Instances data construction for experimental tests.

*Collects information for purposes of business intelligence.  
Develops new information management techniques.  
Keeps track of current developments in the design, use, collection, analysis and preservation of information and/or raw data.*

#### PHASE 2 Expertise and methods

Exact methods optimization and solution methods as heuristic (Nearest Neighbor, 3-opt move), metaheuristic (Ant Colony Optimization). Programming in CPLEX, Gurobi and Python)

*Is familiar with recent progress in fields related to his own.*  
*Is able to engage in dialogue and collaboration with experts in other disciplines or fields of activity.*  
*Takes ownership of new research methods and techniques.*  
*Is able to document and evaluate his activities using statistical methods where applicable.*  
*Can formulate complex problems that correspond to new challenges.*  
*Is able to develop arguments in support of new projects.*  
*Knows how to adapt his arguments to his audience.*  
*Advises and assists his staff in making appropriate use of investigative methods, improving their performance and enhancing their skills.*

## Personal and relational qualities

### PHASE 2 Communication

Active participation in doctoral school's activity as the Poster presentation. Recyclable waste collection routing for informal sector. What's up Doc, April 30th, 2024 and the scientific seminars. Supply chain and Operations planning class in Universidad Icesi

*Adapts his register to communicate with experts in other fields at both the national and international levels.*  
*Masters communication techniques for various contexts and media.*  
*Communicates effectively when addressing a diverse and lay audience.*  
*Knows how to address a community of professionals.*  
*Educates and trains his staff in the use of digital communication technologies.*  
*Is able to work and lead a group in at least English and one other world language.*

### PHASE 2 Collaboration

8 years of experience in industry and 7 years of experience in education allows for collaboration with different people from organisations, students and colleagues.

*Collaborates with people/teams who play a pivotal role on the global scale.*  
*Leads networks and helps to institute dialogue between different entities.*  
*Knows how to establish partnership relations with people working outside his field.*  
*Has the ability to co-produce results and/or innovations.*