

# Bryan GALARZA

Antwerp – Belgium

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🔍 Google Scholar • 📄 ResearchGate • GitHub • 🌐 Personal page

## Career Profile

Operations Research specialist with a strong background in developing optimization algorithms for both academic and real-world decision-making problems. My work bridges theory and practice, with a focus on metaheuristics, exact methods, and data-driven approaches to support efficient, practical solutions across domains such as transportation, logistics, and healthcare.

⚙️ **Core skills:** Combinatorial Optimization | Metaheuristics | Transportation | Algorithms | Programming

🇧🇪 **Nationality:** Belgian citizen (EU)

## Education

### University of Antwerp, ANT/OR

*Doctor of Philosophy (Ph.D.)*

Operations Research

*Supervisors:* Kenneth Sörensen and Pieter Vansteenwegen

*Thesis:* Towards the Goldilocks Zone of demand-responsive transportation services [🔗](#)

**Antwerp, Belgium**

*Jun 2019 – May 2023*

### Ghent University, Industrial Systems Engineering

*Master of Science in Engineering Sciences, Cum Laude*

Industrial Engineering and Operations Research (burgerlijk ingenieur)

*Thesis:* Multimodal coordination schemes for Intelligent Traffic Systems [🔗](#)

**Ghent, Belgium**

*Sep 2016 – Jul 2018*

### Ghent University, Engineering and Architecture

*Bachelor of Science in Engineering Sciences*

Chemical Engineering and Material Science (burgerlijk ingenieur)

**Ghent, Belgium**

*Sep 2012 – Jul 2016*

### Sint-Lievenscollege

*High-school, general secondary education (ASO)*

Science and Mathematics

**Antwerp, Belgium**

*Sep 2005 – Jul 2011*

## Experience

### Department of Engineering Management (ENM) - University of Antwerp

*Postdoctoral Researcher*

**Antwerp, Belgium**

*Oct 2025 – Present*

I work on the STRAUSS project, which focuses on urban logistics within the field of Operations Research. My tasks include:

- Developing algorithms and frameworks for solving urban logistics challenges.
- Supervising and supporting PhD students in their research.
- Collaborating with academic and industry partners to ensure practical impact.
- Working on research proposals and publications to advance the field of logistics.

### VLAIO - Triptomatic

*Lead Operations Research Expert*

**(remote) Duffel, Belgium**

*Oct 2023 – Oct 2025*

Triptomatic is a software company offering digital solutions in healthcare. I am fully responsible for the Operations Research part of a VLAIO-funded development project. My tasks include:

- Conducting research on on-demand transportation problems in healthcare and translating them into OR models.
- Designing and implementing real-time optimization algorithms for vehicle dispatching and routing.
- Integrating Operations Research algorithms into a decision-support framework with GIS-based tools.
- Performing data analysis to evaluate algorithmic performance and identify systemic improvement opportunities.
- Bridging academic research with industrial application, ensuring scientific rigor while delivering practical solutions.

### Department of Engineering Management (ENM) - University of Antwerp

*Postdoctoral Volunteer Researcher*

**Antwerp, Belgium**

*May 2023 – Oct 2023*

As a postdoctoral researcher, I continued to write and publish academic papers in the field of Operations Research. I also presented my research in international conferences.

## Doctoral Researcher

Jun 2019 – May 2023

My PhD research focused on designing and optimizing semi-flexible, on-demand transportation systems.

Key achievements and tasks:

- Researched and designed novel semi-flexible bus services.
- Developed novel algorithms for static and online real-time optimization of on-demand feeder services.
- Published five academic papers in peer-reviewed international journals.
- Presented at multiple international conferences and gave invited seminars.
- Participated in industry collaboration projects, acting as a consultant for companies.

## Atlas Copco

Wilrijk, Belgium

Improvement consultant

Sep 2018 – Apr 2019

Project-based consulting work focused on optimizing packaging policies. My tasks included:

- Documented existing packaging policy for piping components.
- Proposed improvements using linear programming and metaheuristics.

## Languages

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**English:** Proficient

**Spanish:** Proficient

**Dutch:** Proficient

**French:** Elementary

## Computer skills

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### Programming:

- *Proficient:* C++, Python, Java, R, MATLAB
- *Basic:* SQL, MongoCxx

### Software:

- *Proficient:* L<sup>A</sup>T<sub>E</sub>X, CPLEX, Gurobi, Hexaly, CI/CD tools (Bitbucket, Github)
- *Intermediary:* Docker, Jira, FlexSim, VISSIM, Maple, AMPL

**Microsoft Office / Google workspace:** Excel / Sheets, PowerPoint / Slides, Word / Docs, Teams / Meet, Outlook / Gmail, Drive, Calendar (Proficient)

## Accomplishments

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### Sint-Lievenscollege

Antwerp, Belgium

*Dr. Splichal Award*

2011

Award for the best high-school thesis.

### Sint-Lievenscollege

Antwerp, Belgium

*Zuster Roes Award*

2011

Award for significant improvement in various aspects of high-school education.

### University of Antwerp

Antwerp, Belgium

*Best Paper Award*

2020

Finalist (2<sup>nd</sup> place) for the *Best Paper Award* in the Doctoral Day of the Faculty of Business and Applied Economics

### EURO

Monterrey, Mexico

*ELAVIO scholarship*

2022

Winner of the EURO scholarship for attending the ELAVIO summer school.

## Publications (6)

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### A large neighborhood search algorithm to optimize a demand-responsive feeder service

*Transportation Research Part C: Emerging Technologies*, 127 (2021)

DOI: <https://doi.org/10.1016/j.trc.2021.103102>

### A survey on demand-responsive public bus systems

*Transportation Research Part C: Emerging Technologies*, 137 (2022)

DOI: <https://doi.org/10.1016/j.trc.2022.103573>

### A column generation algorithm for the demand-responsive feeder service

*Networks*, 80(3) (2022)

DOI: <https://doi.org/10.1002/net.22095>

## The real-time dynamic online feeder service with a maximum headway at mandatory stops

*Transportmetrica A: Transport Science*, (2023)

DOI: <https://doi.org/10.1080/23249935.2023.2227738>

## A demand-responsive feeder service with a maximum headway at mandatory stops

*Networks*, 83(1) (2023)

DOI: <https://doi.org/10.1002/net.22185>

## Towards the Goldilocks Zone of demand-responsive bus services

*4OR*, 22, PhD Thesis Abstract (2024)

DOI: <https://doi.org/10.1007/s10288-023-00546-4>

## Conference presentations (9)

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### ORBEL 34

Lille, France

34<sup>th</sup> Annual Conference of the Belgian Operations Research Society

2020

A demand responsive feeder-system service with mandatory and clustered, optional bus stops

### ORBEL 35

Virtual

Corona Sessions: Public Transportation

2021

A demand-responsive feeder service with mandatory and optional bus stop

### EURO 2021

Athens, Greece

31<sup>st</sup> European Conference on Operations Research

2021

A large neighbourhood search algorithm to optimize a demand-responsive feeder service

### NORS 2021

Bergen, Norway

The Norwegian Operations Research Society

2021

A demand-responsive feeder service with mandatory stops and frequency constraints

### ELAVIO 2022

Monterrey, Mexico

Latin Ibero-American Summer School On Operations Research

2022

A demand-responsive feeder service with a maximum headway at mandatory stops

### MIC 2022

Ortigia-Syracusa, Italy

14<sup>th</sup> Metaheuristics International Conference

2022

A demand-responsive feeder service with a maximum headway at mandatory stops

### ORBEL 36

Ghent, Belgium

36<sup>th</sup> Annual Conference of the Belgian Operations Research Society

2022

Towards better service quality with the dynamic feeder service with a maximum headway at mandatory stops

### CLAIO 2022

Buenos Aires, Argentina

XXI Latin Ibero-American Conference On Operations Research

2022

Towards better service quality with the dynamic feeder service with a maximum headway at mandatory stops

### IFORS 2023

Santiago, Chile


The 23rd Conference of the International Federation of Operational Research Societies


2023


The real-time dynamic online feeder service with a maximum headway at mandatory stops


## Hobbies

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: Planning and exploring diverse cultures through travel.

: Landscape and urban photography using a mirrorless camera.

: Long-distance hiking, often in mountainous regions.

: Sketching fictional characters and concept art.