



Guillermo Villanueva Benito

MSc & BSc in Mathematics | BEng in Engineering Physics | Ex-OR analyst @ paack

Graduate from Interdisciplinary Higher Education Center (CFIS) at the Universitat Politècnica de Catalunya (UPC). Currently, master's student from the Master's degree in Advanced Mathematics and Mathematical Engineering (MAMME) at UPC.

Very interested in applications of mathematics and engineering to **real-world problems**. Particularly, in data science, machine learning, operations research and optimization.

Hard-working and **passionate** about math applications, seeking for job opportunities as a an applied scientist.

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📍 Barcelona, Spain

in guillermo-villanueva-benito

🌐 guillermo-villanueva-benito

🌐 personal-website

GENERAL SKILLS

Machine Learning

Operations Research

Mathematical Modelling

Data Analysis

Statistical Learning

Numerical Analysis

Mathematical Programming

Statistics

TECHNICAL SKILLS

Python

R

MATLAB

Git

LaTeX

AMPL

OR-tools

C++

GitHub

Excel

Looker

STAN

SQL

CPLEX

LANGUAGES

- **Spanish** ● ● ● ● ●
Native or bilingual proficiency

- **English** ● ● ● ● ○
Full professional proficiency

- **Catalan** ● ● ● ○ ○
Limited working proficiency

WORK EXPERIENCE

◆ Graduate Visiting Researcher

📅 February 2022 - Present

The New Jersey Institute of Technology (NJIT)
(Part time)

📍 New Jersey



- Research work on **computational neuroscience**.
- Analyze behavioral and neural **data**.
- Build and fit **neuronal network models**
- Master thesis: ongoing

◆ Operations Research Analyst

📅 March 2022 - July 2022

Data&Strategy Team - Paack
(Part-time - 5 months)

📍 Barcelona



- **Data analysis** and **visualization** in logistics/transportation/supply chain.
- **Mathematical optimization** methods and simulation models for risk/ROI assessment.
- Develop practical and pragmatic approaches to solve business problems using **real-world data**.
- Collect **business** requirements and deliver easy-to-understand data analysis, results and recommendations to stakeholders.

◆ Undergraduate Visiting Researcher

📅 September 2020 - July 2021

The New Jersey Institute of Technology (NJIT)
(Full-time - 10 months)

📍 New Jersey



- Research work on **computational neuroscience**.
- Analyze **mathematical models** in neuroscience to study the problem of parameter estimation unidentifiability.
- Degree thesis: *Neuronal oscillations level sets for activity constancy: from single neurons to networks*

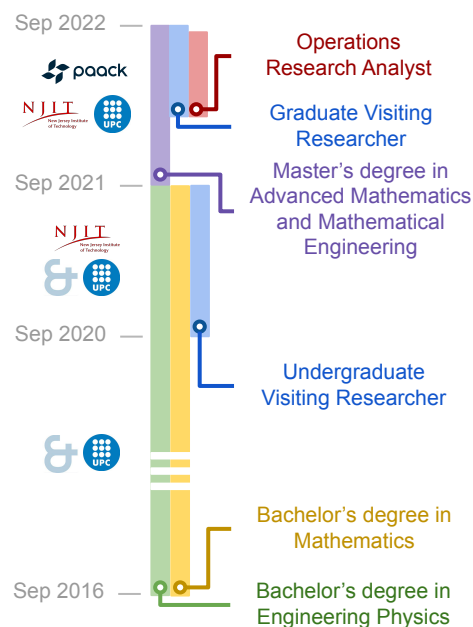
COURSES

- **SQL for Data Science**
IBM DB0201EN, edX
- **Introduction to Computational Neuroscience**
Department of Mathematical Science, NJIT

MILESTONES

- ✓ **Professional experience**
Paack
- ✓ **Attendance to a scientific conference**
Organization for Computational Neurosciences, CNS*2021
- ✓ **CFIS membership**
Center of Excellence at UPC
- ✓ **Scientific publication (to be submitted)**
New Jersey Institute of Technology
- ✓ **Away-from-home university studies**
Barcelona, Catalonia, Spain

TIMELINE



LINKS OF INTEREST

- CFIS-Network website
- Abstract CNS*2021 (P157)

EDUCATION

Master's degree in Advanced Mathematics and Mathematical Engineering

February 2022 - Present
Universitat Politècnica de Catalunya (UPC)
School of Mathematics and Statistics

Barcelona



- Applied mathematics curriculum focused on **data science** and **mathematical modelling**.
- Honors or excellence in 5 subjects.
- Non-curricular internship during the second semester.

Bachelor's degree in Mathematics

September 2016 - July 2021
CFIS - Universitat Politècnica de Catalunya (CFIS-UPC)
School of Mathematics and Statistics

Barcelona



- A rigorous and proof-oriented curriculum with a robust mathematical base, providing a solid knowledge in its applications (**algorithms, computing**).
- Honors or excellence in 2 subjects.
- As part of the **CFIS-program** to course 2 degrees simultaneously.

Bachelor's degree in Engineering Physics

September 2016 - July 2021
CFIS - Universitat Politècnica de Catalunya (CFIS-UPC)
School of Telecommunications Engineering

Barcelona



- Extensive curriculum with solid **physics** fundamental **principles** and their **applications** in key emerging technologies (photonics, robotics, telecommunications).
- Honors or excellence in 5 subjects.
- As part of the **CFIS-program** to course 2 degrees simultaneously.

AWARDS AND RECOGNITIONS

Participation in the 2021 Dana Knox Student Research Showcase

April 2021
New Jersey Institute of Technology (NJIT)



- As a visiting researcher at NJIT, nominated and selected by the screening committee.

Exchange student Scholarship

February 2020 - July 2021
CFIS - UPC



- A six-month scholarship to carry out my Bachelor's thesis at the New Jersey Institute of Technology.

Tuition and Accommodation Scholarship

September 2016 - July 2020
CFIS - UPC



- Scholarship covering the price of a Bachelor's degree and housing in Barcelona.

Honors in Baccalaureate

July 2016
Liceo Europa School, Zaragoza.

