

NICOLÁS VILLAGRÁN PRIETO

Madrid, Spain

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PROFESSIONAL OBJECTIVE

Motivated and hard worker student. Passionate about the interaction between Artificial intelligence, Mathematics and finance, looking to pursue a career in the field. Proven ability to work under pressure in very difficult situations and provide a high level of service.

EDUCATION

UNIVERSIDAD PONTIFICIA COMILLAS, ICAI

Madrid, Spain

Expected: May 2025

Bachelor's degree in mathematical engineering and Artificial Intelligence

- GPA: 8.1/10.00.
- Honoric Mention in Numerical Methods and Deep Learning II
- Awarded with an Academic Excellence Scholarship by the Community of Madrid.

COLEGIO DE FOMENTO TABLADILLA

Seville, Spain

Graduated: June 2021

Sciences Baccalaureate

- GPA: 10.00/10.00.
- University Access Exam: 13.675/14.
- Academic Fellowship.
- Honoric Mention in Mathematics, Physics and Chemistry.

RELEVANT EXPERIENCE

ICAI BLOCKCHAIN CLUB

Madrid, Spain

2021-Present

Member

- Research of blockchain technologies. Development of a blockchain in the field of NFTs.

ICAI CIBERSECURITY CLUB

Madrid, Spain

2022-2023

Member

- Implementation of the cryptosystem RSA and Diffie-Hellman Elliptic Curve.

UNIVERSIDAD PONTIFICIA DE COMILLAS ICAI

Madrid, Spain

2024-Present

Teacher assistant of Numerical Analysis

- Helped designing the workflow of the course and teaching exchange students.

Logixs

Madrid, Spain

June 2024-August 2024

Generative AI engineering

- Lead the project of an advanced vision system for PDF processing.

CO-CURRICULAR ACTIVITIES

- **Mathematics and Physics private lessons teaching** (2019-present).
- **Programming private lessons teaching** (2021-present). Specialized in Python, Matlab and R
- **Volunteer Work:** Collaborated in teaching children in exclusion and poverty situations. Angelman Syndrome Volunteer.

PROJECTS

- **Music Generation (Deep-vibes):** Music generation using Generative Adversarial Networks, Transformers and Variational autoencoders.
- **Development of an encrypted chat:** Diffie-Hellman Elliptic Curve (Number theory).
- **Madrid's GPS:** Implementation of mathematical algorithms in the construction of a Madrid's graph to optimize route planning.
- **Optimization of a stock portfolio:** Developed an advanced portfolio optimization framework using mixed integer linear programming and LSTMs to incorporate expert information.
- **Finetuning of LLMs:** Finetuned a LLAMA model using model distillation under constrained hardware resources.
- **Automatic Speech Recognition:** Designed and implemented a fully integrated end-to-end speech recognition system for improved accuracy.
- **Research on Bayesian Optimization:** Investigated Bayesian priors to improve convergence of optimization algorithms for the problem of hyperparameter search in AI models.
- **Research on Variational Autoencoders:** Explored and modified techniques to enrich the latent space representation of Variational Autoencoders, improving model performance and expressiveness.

All the details of the projects and research can be found at:

<https://github.com/nicolasvillagranp>

TECHNICAL SKILLS

- **Languages:** Python, R, MATLAB, C++, C#, Bash, HTML, JavaScript.
- **Developer Tools, Libraries and Frameworks:** Pytorch, Scikit, Git, Docker, AWS, Unity, BS4, Selenium, Power BI, Tableau, Dash, React, Django, Hadoop, ROS.
- **Database use:** MySQL, MongoDB, NEO4j, Redis.

GENERAL INFORMATION

- **Spanish** (Native). **English** (Fluent). **French** (Basic).
- **Interests:** Sports (Windsurf, surf, paddle, Gym). Applied Mathematics, AI, finance and business intelligence. Reading academic and novels.
- **Teamwork experience:** Kanban and Scrum. Project Leader.
- **Courses and Diplomas:** Diploma in Personal Communication, Communicative and Professional Skills and in Foreign Language Studies (ICADE-ICAI).

