

Ignacio Vigil Cardenal

+34 673231760 | ivigilcardenal@gmail.com | [linkedin.com/in/ignacio-vigil-cardenal](https://www.linkedin.com/in/ignacio-vigil-cardenal)

EDUCATION

University of Warwick

Warwick, UK

BSc Mathematics and Statistics Hons (Expected First Class – 1:1) (First Year Grade: 89.7%) (7-400+ Students)

Sep 2024 - July 2027

- First Year Modules: Maths by Computer (**Python**) 90%, Statistical Laboratory (**R**) 87%, Programming for Scientists (**Java**) 95%, Probability 86%, Linear Algebra 92%, Calculus 89%, Differential Equations 92%, Abstract Algebra 90%, Vector Calculus 88%.
- Second Year Modules: **Finance and Financial Reporting**, **Python** for Data Analytics, Stochastic Processes, Numerical Methods and Computing (**Python**), Mathematical Statistics, Partial Differential Equations, Advanced Probability, Linear Statistical Modelling (**R**).

Caltech

Online

Course: Pricing Options with Mathematical Models (93%) (Equivalent to 3rd Year Undergraduate Module)

August-September 2025

- Acquired a deep understanding of mathematical models for option pricing, including the Black-Scholes and the binomial model.
- Applied stochastic processes, such as Brownian motion, to model asset prices and perform risk-neutral valuation.
- Gained practical skills in calculating option prices and hedging strategies using quantitative methods.

University of Oxford (Lady Margaret Hall)

Online

Course: Artificial Intelligence and Machine Learning: Theory and Practice

July 2025

- Intensive course equivalent to a second-year module covering core machine learning and deep learning techniques using Python.
- Learned topics such as supervised learning (linear and logistic regression), neural networks, convolutional neural networks (CNNs) and practical applications such as natural language processing or computer vision, useful to my URSS project and ML practices.

International College Spain

Madrid, Spain

International Baccalaureate (Bilingual Diploma): Achieved 42/45

Sep 2022 - July 2024

- Mathematics AA (7) (Best Grade in Cohort), Physics (7), Economics (7), Geography (6), Spanish A (6), English B (6)

PROFESSIONAL EXPERIENCE

Undergraduate Research Support Scheme (URSS) by University of Warwick

Warwick, UK

Researcher in Department of Statistics

June 2024 – September 2024

Project: Machine Learning for Brain Tumour Detection

- Developed and evaluated machine learning models for brain tumour detection from medical images, pre-processing large MRI datasets and applying feature extraction techniques like HOG to enhance performance.
- Implemented state of the art techniques such as convolutional neural networks (CNNs) and Bayesian neural networks (BNNs) using Python and PyTorch, achieving over 99% accuracy on test set.
- Developed a platform to showcase the model using Gradio.

Bright Future Academy

Remote

Mathematics Tutor

Jan 2022 – Present

- Tutored over 15 high-school students in advanced mathematics, helping every student significantly improve their grade.
- Designed personalized lessons, breaking down complex concepts such as calculus and linear algebra into accessible, intuitive steps.

EXTRA-CURRICULAR ACTIVITIES

Warwick Mathematical Finance Magazine

Warwick, UK

Contributor

Sep 2024 - Present

- Authored an article detailing how Monte Carlo simulations can be applied to pricing financial derivatives by using stochastic processes, stochastic calculus, Python and statistical modelling-

IMC Prosperity 3

UK

Participant

March 2025 – April 2025

- Ranked 4th among Spanish teams in IMC's Prosperity 3 challenge, developing 5 Python-based market-making algorithms that captured bid-ask spreads and took directional positions based on live order book data to maximise profit.

SKILLS, INTERESTS & CERTIFICATES

Technical skills: Python (Pandas, NumPy, Matplotlib, Scikit-Learn, PyTorch, Pyro), R, SQL and Microsoft Office (PowerPoint and Excel)

Languages: English (Fluent), Spanish (Fluent)

Certificates: Harvard's CS50 (C, SQL and Python), Kaggle Intro to Machine Learning, IBM Intro to Computer Vision and Image Processing

Interests: Football, Basketball, Skiing, Scuba Diving