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25 July 1995
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EDUCATION

2013 - 2016 **BA in Mathematics at Oxford University - First Class Award**

1st year:

Groups and Group Actions
Linear Algebra
Analysis
Probability
Design and Analysis of
Algorithms
Functional Programming
(Haskell)
Imperative Programming
(Scala)

2nd year:

Linear Algebra
Differential Equations 1 and 2
Metric Spaces and Complex
Analysis
Rings and Modules
Integration
Probability
Topology
Number Theory
Graph Theory
Projective Geometry

3rd year:

Topology and Groups
Algebraic Curves
Algebraic Number Theory
Banach Spaces
Hilbert Spaces
Information Theory
Martingales Through Measure
Theory
Continuous Martingales &
Stochastic Calculus

2005 - 2013 **High School - Grande Colégio Universal** (final grade: 19.2 / 20)

WORK EXPERIENCE

June & **Computing the Average Rank of Elliptic Curves** (Summer Project at Oxford University)

July Elliptic Curves are an essential tool in Cryptography and Number Theory. During this project I used
2016 SageMath to populate a database with Elliptic Curves and their properties in order to analyse the
asymptotic behavior of properties such as the height of the elliptic curves increases.

Jul – Sep **Farfetch**

2015 Summer Internship where I applied self-taught Machine Learning techniques to solve a commercial
problem. The project I initiated was continued by other employees. I used Python, Microsoft Labs,
Microsoft SQL and R. This resulted in a published paper with Nuno Carneiro (available for perusal on
request).

ACADEMIC EXPERIENCE

5th Nov **G-Research Algorithmic Trading Competition** (Stock Exchange Simulator)

2014 Each team was tasked with the writing of a micro transaction manager algorithm. The relative
performance of each team was determined through a live trial with stock values based on a
random historical sample.
1st Place

July & August **London International Youth Science Forum**

2014 Participant - Entry funded as a prize by the Calouste Gulbenkian Foundation.

2010 - 2013 **Delfos Project** (Mathematical Weekend School for pre-University students)

Met many friends with whom I still share mathematical insights and interesting problems.

10th Mar 2012 **Hands on Particles**

Masterclasses on Particle Physics organized by the *European Particle Physics Outreach Group*
Participant

SKILLS

IT Theoretical basis in Imperative Programming (Scala), Functional Programming (Haskell) and Design
and Analysis of Algorithms.
Medium proficiency in Python.
Basic proficiency in C++ and Haskell.

Software Microsoft Office, Open Office, Anaconda & Jupiter Notebooks, Mathematica, SketchUp, R.

Driving Category B
License

OLYMPIADS

- May 2009 **Portuguese National Chemistry Olympiad** (Silver Medal)
- November 2010 **Paulista Math Olympiad** (Bronze Medal)
- March 2012 **Portuguese National Math Olympiad** (Gold Medal)
- July 2012 **Portuguese Speaking Countries Math Olympiad** (Silver Medal)
- November 2012 **Paulista Math Olympiad** (Silver Medal)
- March 2013 **Portuguese National Math Olympiad** (Bronze Medal)
- August 2013 **Portuguese Speaking Countries Math Olympiad** (Gold Medal)
- September 2013 **Ibero-American Math Olympiad** (Bronze Medal)

LANGUAGES

- Native/Bilingual Proficiency **Portuguese**
English
- Basic Proficiency **Spanish**
French

INTERESTS & ACTIVITIES

- Puzzles** I enjoy spending hours on riddles. This includes working with Lego, coding problems, developing the optimal strategy for board games, real time strategy PC games, wondering about philosophical paradoxes, amongst others.
- Sports** Oxford University Handball team 2014-present
Oxford University Quidditch team 2013-2014
College level Football, Basketball and Pool

REFEREES

- João Sousa** Physics PhD, University of Aveiro (2014)
Data Scientist at Farfetch, Portugal, joao.gomes@farfetch.com
- Richard Earl** Director of Undergraduate Studies, Mathematical Institute, University of Oxford,
richard.earl@maths.ox.ac.uk
Tutor in Mathematics and Tutor for Admissions, Worcester College, University of Oxford.

USEFUL LINKS

Online Webpage

<https://migueltorrescosta.github.io>



CV

<https://migueltorrescosta.github.io/CV.pdf>



Software Experience

<https://migueltorrescosta.github.io/software/>

