

**Miguel Pereira Torres Costa**  
25 July 1995  
Rua Pintor Júlio Ramos, 356  
Guilhabreu, 4485-265  
Vila do Conde, Portugal  
Cell (UK): +44 07541712209; Cell (Portugal) +351 918310670  
miguel.torres@worc.ox.ac.uk

## EDUCATION

---

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

**1<sup>st</sup> year:**

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

**2<sup>nd</sup> 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

**3<sup>rd</sup> 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

---

5<sup>th</sup> 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.  
1<sup>st</sup> 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.

10<sup>th</sup> 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.