MIGUEL PEREIRA TORRES DA COSTA

Current Job: Founder of Quest Powered, https://questpowered.com
Date of Birth: 25th July 1995
Nationality: Portuguese
Education: Masters in Mathematics at Oxford University
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CONTACT

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PROFESSIONAL SUMMARY

As a young mathematician and math Olympian I practiced problem solved in an abstract yet well-defined setting, which rewarded creativity of approaches to new problems and attention to detail. Having joined the workforce, the biggest leap faced was going from well-defined theoretical problems to the fuzziness of business problems. In this context, productivity is achieved by keeping up to date with industry best practices in order to avoid unnecessary work, and by creating a network of experts so that we can help each other when facing new problems.

SKILLS

- ●●●●● English
- ●●●●● Portuguese
- ●●●●● Driving License
- ●●●●● Mathematics
- ●●●●○ Machine Learning
- ●●●●○ Python
- ●●○○○ Keras and Tensorflow
- ●●○○○ Linux
- ●●○○○ Git
- ●●●○○ SQL

EXPERIENCE

Founder of QuestPowered (Jun 2020 – Present)
- Built a forecasting platform over 6 weeks.
- Built KPIs for measuring forecasting ability under random outcomes based on concepts from Information Theory and Measure Theory.
- Self taught Django as a website development platform.
- Setup a custom domain and server for delivering the product.
- The existing platform can be access via https://questpowered.com .

Portfolio Risk Analyst at BlackRock's Financial Modeling Group, Budapest (Sept 2018 – Jun 2020)
- Expanded a dividend forecast model built for the US Market to 18 other countries, providing near global coverage given the unequal wealth allocation between countries.
- Studied statistical anomalies on live market data under daily deadlines, delivering reports to our clients with full understanding of all data handed over.
- In a team of 5, implemented a novel and experimental risk analysis methodology in a week as part of an hackathon project and presented it to a Regional committee, getting 2nd place in EMEA.

Teacher at CamExpress Summer Programme, Shanghai (Jul 2018 – Aug 2018)
- Developed lesson plans for classes ranging between 8 and 41 students.
- Prepared assessment materials aimed at ranking the students' performance.
- Was rewarded monetary prizes based on my performance as a teacher and the contribution of new materials

Data Scientist at Farfetch, Porto (Jul 2017 – Dec 2017)
- Improved the performance of Farfetch's Product Ranking Algorithms.
- Played a role in the distribution of sprint tasks while following an agile methodology.
- Connected the development cycle from the initial business need, to software development, internal testing and user testing.
- Collaborated in the setup of a automatic clothing identifier using Python's Keras package.

Mathematics Tutoring (2017 – Present)
- Students' age range between 10 and 34 years old.
- Swiftly adapted my domain knowledge to the students background in order to make the most of the tutorial sessions.
- More details found at https://universitytutor.com/tutors/944174

Number Theory Researcher at Oxford University, Oxford (Jun 2016 – Jul 2016)
- Learnt the basics of Elliptic Curves during a 1 week crash course with Dr Jennifer Balakrishnan.
- Adapted algorithms by William A. Stein in order to efficiently populate databases of Elliptic Curves, running these algorithms using Google Cloud while keeping running costs to a minimum.

Data Scientist Summer Intern at Farfetch, Porto (Jul 2015 – Aug 2015)
- Built an internal Fraud Detection System at Farfetch.
- As it was my first internship, I self taught Machine Learning in Python, R and SQL during the initial weeks.
- The foundational code was built over the span of a 7 week internship.

Oxford's RAG Casino Croupier, Oxford(2014 – 2016)
Raise and Give (RAG) is a charity which aims to raise money and donate it to other institutions in greater need. As a Poker Croupier, I performed quick mental arithmetic in order to split pots appropriately, while maintaining a formal posture during the occasional presence of tipsy players.

EDUCATION

Master in Mathematics at Oxford University (October 2017 – June 2018)
Final Grade: Upper Second Class

Bachelours in Mathematics at Oxford University (October 2013 – June 2016)
Final Grade: First Class Honours
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, 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.

High School – Grande Colégio Universal (October 2005 - June 2013)
Final Grade: 19.2

MISCELLANEOUS

Information Pricing Jupyter Notebook
In the age of KPIs, some of the more humane traits are arguably non measurable, such as affection. Hubbard convincingly argues in his book "How to Measure Anything" that anything can be measured, and a framework for pricing information / new measurements. I've built a Python implementation of his ideas here: https://colab.research.google.com/github/migueltorrescosta/tutor/blob/master/ExpectedOpportunityLoss.ipynb

G–Research Algorithmic Trading Competition (Nov 2014)
Developed an high frequency trading algorithm for a simulated stock exchange based exclusively on the order book.
Received the 1st Prize

LIYSF Participant - London International Youth Science Forum (Jul 2014 – Aug 2014)
Entry fully funded by the Calouste Gulbenkian Foundation, awarded based math Olympiad performance.
LIYSF aims to expose young students to the world of STEM across national barriers and continents.

Math Olympian as a member of Delfos Project (2010 – 2013)
Represented Portugal due to my performance at the National Math Olympiads and Delfos' selection exams.
Achieved a total of 3 Bronze Medals, 3 Silver Medals and 2 Gold Medals.

Hands on Particles
Attended Masterclasses on Particle Physics Organized by the European Particle Physics Outreach Group

PUBLISHED ARTICLES

A data mining based system for credit-card fraud detection in e-tail (https://doi.org/10.1016/j.dss.2017.01.002)
- Co authored a paper with Nuno Carneiro at Farfetch based on the results of my first internship

OLYMPIADS

May 2009	**Portuguese National Chemistry Olympiad**	Silver Medal
November 2010	**Paulista Math Olympiad (Portugal and Brazil)**	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

FAVORITE BOOKS

Predictably Irrational, by Dan Ariely
Dan Ariely discusses consistencies in the way that we make sub optimal decisions, and provides possible theories which bring light into why these inconsistencies exist. This work closely related to the thesis behing the books Nudge and the UK's Behavioral Insights Team

Blink: The Power of Thinking without Thinking, by Malcolm Gladwell
Gladwell exposes differences between thoughtful actions and instinctive actions, made during the blink of an eye, and compares the benefits of both methods, studying how we can use them to our benefit.

Turn the Ship Around: A True Story of Turning Followers into Leaders, by David Marquet
A short read, this eighty page book has a simple premise: a work force is much more efficient and self sufficient when everyone has to think and argue as if they were the ones calling the shots. This is an easy premise, but surprisingly hard to implement. Marquet's difficulties and successes on managing the US Submarine Santa Fé provide insight in how to bring this leadership mechanism to fruition.

The Global Casebook of Investigative Journalism, written collaboratively by UNESCO
This book aggregates personal experiences from many journalists around the world, describing challenges faced to gather their stories. From fighting corporate secrecy to human rights crimes, the stories shared show that there's a light at the end of the tunnel for those with the willpower to fight the good fight.

Getting Gamers: The psychology of Video Games and Their Impact on the People who Play Them, by Jamie Madigan
The reaction to the corona virus pandemic has many similarities to the 2008 Corrupted Blood incident in World of Warcraft. Adherence rates to promotions follow trends with the completion rate of side quests in many games. In the real world, gathering data is a costly process, but in the world games we have enough data to maximize and A/B Test all the minor details that influence gamer and costumer decisions. This book reflects on many of these trends, and draws parallels between gamer choices and real world decisions, both of which based on the same human nature and needs.

Long Walk to Freedom, by Nelson Mandela
We have all heard of the myth of Nelson Mandela, but underlying his success was not only his well known moral values, but also he's lesser known impressive control of South African Law. This book paints a picture where to succeed in his goals, not only did he have to never give up on his principles, but also be a studious man who knew his rights and human nature like the palm of his hand.
