JAMES CAMPBELL

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github.com/theref

PERSONAL PROFILE

I am an undergraduate mathematics student on course to obtain a First Class Degree with honours, currently seeking a post graduate position in applied mathematics. I have undertaken mathematical research throughout my undergraduate career, mainly focusing on the area of Game Theory, with a small contribution made to the area of Alternating Sign Matrices. I also spent a year working at one of the UK's largest Insurance companies applying my analytical skills within an industrial environment.
Since my first undergraduate year, I have been awarded a mathematics scholarship, presented my work at an international conference and twice been selected from 160 of my peers to undertake a research internship during the summer break.

WORK EXPERIENCE, RESEARCH AND PUBLICATIONS

SEPT. 2016 - MAY 2017
Final Year Project, "Fingerprinting Prisoners Dilemma Strategies"
Reproduced research to differentiate between different strategies in Prisoners Dilemma using fingerprinting. Those tools where added to the open source library Axelrod-Python, and then used to analyse all of the strategies within the library. The second half of the project will be to develop novel ways to categorise and identify strategies. This improved my software development skills and also allowed to me to undertake a large amount of independent research with some guidance from my supervisor.

AUTUMN SEMESTER 2016 & 2014
Tutoring of 1st Year Students Studying 'Computing for Mathematics'
Ran weekly lab sessions for 1st year students learning python. This was a beginners course that covered all the basics of OO programming and also included a brief introduction to LaTeX.

AUGUST 2016
Co-Author of "An Open Framework for the Reproducible Study of the Iterated Prisoners Dilemma"
The paper can be found at `http://openresearchsoftware.metajnl.com/articles/10.5334/jors.125/`

SEPT. 2015 - JULY 2016
Pricing Analyst at Admiral Group PLC
Obtained a prestigious industrial placement at one of the UK's largest Insurance companies. I worked in the Pricing Department, analysing claims statistics to make decisions about the underlying pricing structure that produces a quote for potential customers. For more information please visit `http://www.admiral.com/about-us/`

SUMMER 2015
Research Internship, Cardiff University School of Mathematics
Independently investigated "The expected wait in a tandem queue with blocking with a game theoretic study of the Hospital EMV interface" with guidance from Dr. Vince Knight. A paper has been started and should be finished sometime after my graduation.

SUMMER 2014
Research Internship, Cardiff University School of Mathematics
Employed for the Summer to lead a project developing Game Theoretic algorithms within the open source mathematics package, Sage. Areas of Game Theory included: Normal Form Games, Co-operative Games and Matching Games. The code produced is available on several branches at `https://github.com/theref/sage-game-theory/`

SPRING SEMESTER 2014
Development of a Django Web Application
During an 11 week assessed activity of my Computing for Mathematics module, I developed a dynamic web application using the Django framework. The application can be viewed at `http://thefightclub.herokuapp.com` and the code is available at `https://github.com/Fight-Club/fightclub/`

EDUCATION

CURRENT
BSc Mathematics and its Applications
Cardiff University, Department of Mathematics
First Class Degree with Honours expected June 2017

SEPT. 2011 - JUNE 2013
St. Nicholas Catholic High School
A-Levels: Maths - A*, Further Maths - A, Physics - A
AS-Levels: Biology - B, Chemistry - B

SEPT. 2006 -
St. Nicholas Catholic High School

JUNE 2011 GCSEs: Maths - A*, Additional Maths - A*, Physics - A*, English Language - A*, English Literature - A*, Biology - A*, Chemistry - A*, French - A, History - A, RE - A, Art - B.

SCHOLARSHIPS AND PRIZES

MAR. 2015 Sage Conference at UC Davis, California - Earned the opportunity to spend a week attending a conference dedicated to Sage held at UC Davis during which I contributed code related to Alternating Sign Matrices `https://wiki.sagemath.org/days64`.

JAN. 2014 Django Conference - I was invited to talk at the UK's first ever Django conference where I presented the work I had completed for my computing coursework.

DEC. 2013 Department of Mathematics Prize - awarded for the highest mark in Computing for Mathematics module.

SEPT. 2013 Department of Mathematics Scholarship - awarded to the top 10 students who achieved the highest 'A' level grades of that year's intake.

VOLUNTEERING

SUMMER 2016 **Designed and Built Playgrounds for Schools in Indonesia, CAUKIN**

As a group of students we designed and built 2 playgrounds for schools in Indonesia. Everything was organised and managed by members of the team, with no external companies involved. This improved my project management skills and also developed my creativity. For more information please visit `http://www.caukinstudio.com`

SEPT. 2013 - CURRENT **Adult Leader at 1st Helsby Scouts**

Continued to develop communication skills whilst helping to supervise and teach children aged 10 - 16 years. Currently organising and managing a 2 week international expedition that will take place north of the Arctic circle in summer 2017, `http://nord2017.no/english/`

SEPT. 2010 - SEPT. 2013 **Referee with the Rugby Football Union**

I began refereeing rugby union at the age of 15. Within 3 years, I had been promoted from level 15 to level 6 - the highest regional level and only one below the point where I could referee national level games. The experience of taking charge of 30 men (often twice my age) in an aggressive and physical sport has given me confidence in my ability to remain calm in high pressure situations.

SEPT. 2009 - JULY 2013 **Young Leader at 1st Helsby Scouts**

Developed communication skills whilst helping to supervise and teach children aged 6 - 10 years. I was regularly assigned to lead small group activities which improved my organisation and leadership skills.

PROGRAMMING SKILLS

I am proficient in most aspects of computing:

- Operating Systems: Windows, MacOS, Linux (server and client);
- General software: Excel, Word Processing (LaTeX, Microsoft Word, Libre office), Presentation (Beamer, Microsoft Powerpoint);
- Programming: Python, Django, Ruby, Git, Trac and well evidenced ability to gain proficiency in new languages quickly.
- Supercomputing: Experience using Cardiff University's supercomputer RAVEN and submitting jobs using PBS.

For an overview of my programming portfolio, please see my Github profile: `https://github.com/theref`.

ACHIEVEMENTS AND INTERESTS

I have been involved in Scouting from the age of 8, playing a leading role in the organisation both as member and a leader. Recently, I was appointed a group-wide, adult leader position which will allow me to continue the work I have been doing whenever I am home from University. I will be leading a group of 30 scouts on an international expedition in Norway in summer 2017.

I have played Rugby Union from the age of 5, reaching county standard and playing for the Welsh Exiles before injury forced my retirement. This gave me a lot of experience of working within a team, both as a captain and a member.

At University, I took up the sport of Ultimate Frisbee. I have been promoted to the first team, represented my university at several national tournaments (including varsity) and was elected to serve as treasurer during my second year.

In my spare time I relax by playing the piano, having achieved Grade 5 some years ago. I hold a full, clean UK driving licence.

REFEREES

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Prof. Nikolai Leonenko
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