

Paul Dubois

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Personal Profile

- Studying **mathematics** in MSci program in UCL
- Developed **teamwork** through many group projects
- Fervent adept of **computer science**, that I learned on my own
- Have some **experience in research** in both math and computer science through different projects

Education

University College London, London (United Kingdom) **2016 - 2020**

MSci Mathematics

4th Year: Expected average +80%

Courses: Advanced Modelling Techniques, Spectral Theory, High-Performance Computing, Representation Theory, Waves and Wave Scattering, Evolutionary Games and Population Genetics

Extra courses: Modular Forms, General Relativity, Cosmology

Research project in Computational Algebraic Number Theory on Modular forms mod 2

Talk (1h, to ~25 students) on random walks and minimal surface, presenting my own research

Mentor of a group of 15 students in 1st year at UCL

3rd year: Grade average 85%

Courses: Functional Analysis, Graph Theory and Combinatorics, Algebraic Number Theory, Probability, Measure Theory, Galois Theory, Multivariable Analysis, Elliptic Curves

Extra courses: Differential Geometry, Commutative Algebra, Mathematical Logic

Group project on Galois theory, leading to an oral presentation

1st Prize for best student group presentation of 2nd year research project

2nd year: Grade average: 82%

Courses: Complex analysis, Real Analysis, Groups and Rings Algebra, Linear Algebra, Number Theory, Fluids Mechanics, Mathematical Methods

Extra course: Probability and Statistics

Group project in geometry on Cauchy-Crofton Formulae

1st year: Grade average 86% (ranked 6th) – Winner of Undergraduate Prize in Mathematics

Courses: Analysis, Algebra, Mathematical Methods, Applied Mathematics, Newtonian Mechanics

Group project in cryptography, building an RSA encrypted text editor

Jean-Pierre Vernant High School, Pins-Justaret (France) **2015 - 2016**

French scientific Baccalaureate, math specialty - with highest honors ("Mention Très Bien") 2016

Scholarship Aptitudes Test (SAT) taken while in 11th grade in the US, score in math: 740/800 (top 3%) 2015

Research Experience

Internship in digitalization **Jun - Sept 2019**

At Airbus (Toulouse, France)

A four-month paid internship in high-technology well respected aircraft French company

- **Coding**: I helped in the digital transition as a digital "champion"
Creating interactive dashboards using web technologies (HTML, CSS, JS) and data base requests (SQL) for full digital collaboration
Automating task using Python, saving hours to co-workers
- **Human skills**: Work in a team with collaborators

Make Harvard (Hackathon in Harvard) **Feb 2019**

Developed hardware which translates real-life rotations into rotations in a modelling software

Oxford Hack (Hackathon in Oxford) **Nov 2019**

Developed a tool that merges information from many documents into a single document

Porticode 3.0 - Prize Winner (Hackathon in UCL) **Nov 2019**

Created in 90's style website and game from scratch

Research Assistant (at distance) for Susana Vasserman (PhD at Harvard, Economics Department, now assistant prof. at Stanford) Doing Textual Data Analysis with Python	Jan - Mar 2018
Research Assistant for Pierre Dubois (Professor at Toulouse School of Economics) Scrapping data for economic analysis of Antibiotic Resistance, using asynchronous requests	Nov 2017
Internship on Artificial Intelligence & Logic At research lab in computer science "IRIT" of University of Toulouse (France) Supervision by Prof. Martin Strecker. Programed Artificial Intelligence using various techniques: Genetic Algorithms, Reinforcement Learning, Neural Networks, Constraint Programming...	Aug - Sept 2017
Winner of Innovation Competition « Innovez » - 1000€ In the French scientific review "Science et Vie Junior" (SVJ n°329) For a Morse decoding machine: it allows one to type Morse (received as sound or light signal) through buttons, the decoded text is then displayed on the screen using usual alphabet	Feb 2017
Volunteering	
Active member in educative FabLab info@lèze <ul style="list-style-type: none"> Led workshops to teach secondary school students 3D modelling and web development Directed a mini-summer camp (3 days) for secondary school students, making them build wireless audio speakers, touching Computer Aided Design and electronic Designed, build & realized projects on my own (square wheels bike, latex pad for math students, portable 2nd screen for laptops, Morse decoder... more on my web page) 	2014 - Present
European Scouting <ul style="list-style-type: none"> Webmaster (Reporting major activities on the official web site of the group) Chief (managed 25 teenagers) Leader of a "patrol" (group of 7 teenagers) – with <i>treetop patrol</i> distinction 	2011 - Present 2017 - Present 2016 - 2018 2015 - 2016
Other Work Experience	
Kitchen clerk in the restaurant "La Plage", Venerque (France)	Jun–Jul 2018
Dishwasher in the restaurant "La Plage", Venerque (France)	Jun–Jul 2017
<u>Skills gained:</u> Teamwork, working under time pressure & get things done well and quickly	
Technology Skills	
GitHub repository: https://github.com/pauldubois98	Web Page: https://pauldubois98.github.io/
<ul style="list-style-type: none"> Python Oriented Object Programming (OOP), web scraping (with Requests, Ajax, or API), multi-threading, Graphical User Interfaces (GUI, with Tkinter & PyGame), data cleaning/formatting, data analysis (with Pandas, Matplotlib, using Jupyter), High-Performance Computing (HPC, with Numba, NumPy, NumExpr, OpenCL), textual analysis, <i>advanced knowledge overall</i> HTML, CSS & JavaScript producing smart web interfaces form interactive dashboards, web apps, to online games, concentrating on front-end Java & Kotlin (Used for <i>Android Apps</i>, "Cauchy-Crofton App" for example, which allows to apply an abstract math formula to real life) C++ (Created a group chat messenger platform to run over internet, also used for hardware electronics) C (Sokoban game, also used for hardware electronics) Latex (and presentations with <i>Beamer</i>) Microsoft Office including <i>Excel</i> (macros), <i>PowerPoint</i> and <i>Word</i> Electronics using most common programmable microprocessors such as <i>Arduino</i> or <i>ESP</i> (created a wide range of objects from remote controlled boat to precision laser timer) Computer Aided Design (CAM) using <i>OnShape</i> Computer Aided Manufacturing (CAM) doing <i>3D printing</i> and <i>laser cutting</i> 	
Others	
French: Native Speaker	English: Fluent
Sport: Rock climbing (13 years)	Driving License: 2 years