Paul Dubois

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EDUCATION

MSci Mathematical Sciences, Oxford University **2020-2021**

Courses: Analytic Topology, Category Theory, Approximation of Functions, Theories of Deep learning, Networks, Random Matrix Theory, Dissertation on Random Fractals and Branching Processes

MSci Mathematics, University College London **2016-2020**

*Grade average **85%***

Key courses: Probability, Measure Theory, Spectral Theory, Functional Analysis, Multivariable Analysis, Differential Geometry, Analytic Number Theory, Graph Theory and Combinatorics, Elliptic Curves, Commutative Algebra, High-Performance Computing, Evolutionary Games and Population Genetics

Research project on Modular forms mod 2: "Governing Fields for the Hecke Algebra"

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

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

Winner of undergraduate prize in mathematics in 1st year (ranked 6th)

EXPERIENCE

Internship at Room Furnisher, in charge of the tech development **Jul-Sept 2020**

Improved and brought together open-source projects to fit the needs of the startup

Used python as a scripting language, and learnt to read documentations.

Internship at Airbus, participated in creation of new digital tools **Jun-Sept 2019**

Designed interactive dashboards to monitor project progress using SQL, HTML, CSS, and JS

Created python software to automate the data entry processes

Make Harvard (Hackathon in Harvard) **Feb 2020**

Developed a headphone extension to change the perceive position of the sound

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

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

Oxford Hack (Hackathon in Oxford) **Nov 2018**

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

Porticode 3.0 (Hackathon in UCL) - *Prize Winner* **Nov 2018**

Created in 90's style website and game from scratch

Research Assistant (at distance) *for Susana Vasserman (PhD at Harvard, Eco. Dept.)* **Jan-Mar 2018**

Doing Textual Data Analysis with Python

Research Assistant *for Pierre Dubois (Professor at Toulouse School of Economics)* **Nov 2017**

Scrapping data for economic analysis of Antibiotic Resistance

Internship on Artificial Intelligence & Logic *under supervision of Professor Martin Strecker* **Aug-Sep 2017**

Created A.I. using various techniques (such as Genetic Algorithms, Neural Networks…)

Active member in educative FabLab Info@lèze **2014-Present**

Led workshops to teach secondary school students 3D modelling and web development.

European Scouting **2011-Present**

Webmaster (since 2017), Chief (2016-2018), Leader of treetop patrol (2015-2016)

TECHNOLOGY SKILLS

GitHub repository: https://github.com/pauldubois98 Web Page: https://pauldubois98.github.io/

- **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 *Advanced knowledge overall*
- **HTML, CSS & JavaScript** (produced smart web interfaces, such as interactive dashboards, web apps, and games)
- **Julia** fast mathematical computing, creation of public package ("ModularFormsModuloTwo")
- **Java & Kotlin** (Used for *Android Apps*, e.g.: Cauchy-Crofton, used for applying an abstract math formula to real life)
- **C/C++** (Created a chat messenger desktop app to run over domestic network, also used for *hardware electronics*)
- **Latex** (and presentations with *Beamer*)
- **Electronics** using most common programmable microprocessors such as *Arduino* or *ESP* (created a wide range of objects from remote controlled boat to precision laser timer)
- **Computer-Aided technologies (CAx)** CAD (using OnShape) and CAM (doing 3D printing and laser cutting)

OTHERS

French: Native Speaker **English:** Fluent