PAUL DUBOIS   "leveraging science for a better world"

EXPERIENCE

PHD CANDIDATE, CENTRALESUPÉLEC, THERAPANACEA   Oct 2021 – Dec 2024

Developing adaptive radiotherapy optimization, using Artificial Intelligence.

Conferences and publications:

- "Radiotherapy Dose Optimization via Clinical Knowledge based Reinforcement Learning", Artificial Intelligence in Medicine (AIME), 2024
- "Clinically Dependent Fully Automatic Treatment Planning System", American Society for Radiation Oncology (ASTRO), 2024
- "A Novel Framework for Multi-Objective Optimization and Robust Plan Selection Using Graph Theory", European Society for Radiotherapy and Oncology (ESTRO), 2024
- "Dose Volume Histograms Guided Deep Dose Predictions", Société Française de Physique Médicale (SFPM), 2024
- "Attention Mechanism on Dose-Volume Histograms for Deep-dose Predictions", Société Française de Radio Oncologie (SFRO), 2024

(PART TIME) FREELANCE DATA SCIENTIST   Oct 2021 – Dec 2024

Various data science projects.

INTERN, ROOM FURNISHER   July – Sept 2020

Created the MVP of the startup, bringing together open-source projects.

INTERN, AIRBUS   Jun – Sept 2019

Designed tools for process automation using SQL, {HTML, CSS, and JS}, and Python.

EDUCATION

MSC MATHEMATICAL SCIENCES, OXFORD UNIVERSITY   Sept 2020 – July 2021

Grade average 68% (merit)

Courses: Analytic Topology, Category Theory, Approximation of Functions, Networks

Dissertation on Random Fractals and Branching Processes.

MSCI MATHEMATICS, UNIVERSITY COLLEGE LONDON   Sept 2016 – July 2020

Grade average: 85% (first)

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".

TEACHING

DEEP LEARNING, CENTRALESUPÉLEC (PARIS)   Jan – Mar 2023, 2024, 2025

Course for 5th year master engineering students, taught in French.

Content: deep learning from scratch (back-propagation), perceptron, convolutions, optimizers & learning rates, RNN, U-net, V-net, GANs; with Kaggles created as homework.

MATHEMATICS, ESSEC (CERGY)   Sept 2021, 2023, 2024

"Mathematics Refresher" course for DSBA (Master Students), taught in English.

Content: basic methodologies for proofs; linear algebra, differential calculus, integration, and asymptotic analysis; prerequisites of the courses in the master.

DATA ANALYSIS, IRONHACK (BARCELONA)   July – Aug 2023

9 weeks bootcamp, taught in English.

Content: Python, SQL, Web Scraping, Tableau, Probabilities & Statistics, Basics of AI/DL.

TUTORIAL SESSIONS, CENTRALESUPÉLEC (PARIS)   Oct 2021 – Dec 2024

Coding, Optimization, Algorithms & Complexity, Computer Science; taught in French.

OTHERS

French (Native Speaker); **English** (Fluent); **_Driving License_**