

Patrick Lutz

PHD STUDENT · COMPUTER SCIENCE

Center for Computing & Data Sciences
665 Commonwealth Avenue, Boston, MA 02215

✉ plutz@bu.edu | 🏠 cs-people.bu.edu/plutz/

Education

Boston University

PHD COMPUTER SCIENCE

- Advisor: Prof. Venkatesh Saligrama

Boston, USA

2022 – present

Sorbonne University

MS MATHEMATICS, TRACK *Statistics and Machine Learning*

- Distinction *magna cum laude*
- Advisors: Claire Boyer and Erwan Scornet (École Polytechnique)
- Thesis: “On the Initialization of Deep Neural Networks: How incorporating prior knowledge on expressive feature interactions can improve Neural Network learning.”

Paris, France

2020 – 2022

Sorbonne University

BS MATHEMATICS, BS COMPUTER SCIENCE

- Distinction *summa cum laude* in both disciplines, ranked 2nd in the cohort
- Advisor: Cédric Doucet (INRIA)
- Thesis: “A priori selection of the fastest iterative algorithm for solving sparse, non-symmetric linear systems of equations”.

Paris, France

2017 – 2020

Research Experience

Sorbonne University

RESEARCH INTERN

- Development of an initialization technique for deep Neural Networks on tabular data
- Advisors: Claire Boyer and Erwan Scornet (École Polytechnique)

Paris, France

04/2022 – 09/2022

Institute of Mathematics at Aix-Marseille University

RESEARCH FELLOW

- Working in the field of complex analysis
- Advisor: Camille Plénat

Marseille, France

05/2018 – 06/2018

Professional Experience

National Research Institute for Agriculture, Food and Environment (INRAE)

SOFTWARE DEVELOPMENT INTERN

- Development of an R package for the analysis of both input and output data from crop model simulations: “CroPlotR”
- Engaging in interdisciplinary collaboration with biologists and climate scientists to customize the package according to their specific application requirements

Avignon, France

05/2021 – 08/2021

Scoobe3D GmbH (start-up)

SOFTWARE DEVELOPMENT INTERN

- Startup focused on designing a user-friendly 3D scanner with the compact size of a smartphone
- Creation of two subroutines for the 3D scanning pipeline: one for the real-world scaling of scan data implemented in Python, and another for noise suppression utilizing AI in C++
- Conducting experimental work on the 3D scanner, involving device calibration and the generation of preview scans

Augsburg, Germany

06/2020 – 08/2020

Agricultural Institute Obala

INTERNATIONAL VOLUNTEER

- Involvement in an educational institution with focus on agricultural studies, spanning all levels from school to university

Obala, Cameroon

09/2016 – 08/2017

Teaching Experience

Boston University

Boston, USA

TEACHING FELLOW

01/2023 – 04/2024

- Course: CS 330, Introduction to the Analysis of Algorithms
- Rating: Very good (45%), Excellent (55%), based on 14 responses
- Excerpt from course evaluations: “Patrick does a great job at teaching students and sharing problem-solving skills. He admits when he makes mistakes and is humble in his approach to teaching; he knows that the coursework is difficult and does his best to help students achieve their goals.”

Publications

PUBLISHED

Patrick Lutz, Ludovic Arnould, Claire Boyer, Erwan Scornet. Sparse tree-based Initialization for Neural Networks. *Eleventh International Conference on Learning Representation (ICLR)*, 2023. [arxiv] [code]

Awards, Fellowships & Grants

2022	Chair’s Fellowship for study in the Computer Science PhD program , Boston University	\$ 5,000
2021	Fourth-year thesis ranked 1st in the cohort , Sorbonne University	
2018	Summer Undergraduate Research Fellowship , Aix-Marseille University	1,200€
2016	High School Grad. Award for Special Achievements in Physics , German Physical Society	

Competences

PROGRAMMING LANGUAGES

Python, pytorch, opacus, scikit-learn. **R**, tidyverse, plotly, knitr. **C++**.

LANGUAGES

German, native. **English**, fluent. **French**, fluent. **Spanish**, beginner. **Catalan**, beginner.