

Killian Bakong

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RESEARCH EXPERIENCE

PhD since October 2023

Currently pursuing a PhD on the topic "Decentralized learning for large-scale and foundation models", in ARGO team of INRIA Paris, supervised by K. Scaman and L. Massoulié. The aim is to look at how decentralization affects the learning on theoretical and empirical points of view.

Research intern January - July 2023

Research internship in HeKA team, an INRIA/Inserm joint team in Paris. The subject was the study of survival analysis with time series. The aim of the internship was developing mathematically, and technically, a model able to estimate event distribution in a medical data context, and it led to the conception of a Neural Controlled Differential Equations based model.

Research intern June - October 2022

Research internship in GEOPS lab, of Université Paris Saclay, which is dedicated to the study of geology. I was more specifically working within the team studying planetary geomorphology. The aim of the internship was to design a tool helping to crater detection on planet Mars, by enhancing images thanks to super-resolution methods.

Research intern April - August 2021

Research internship about the use of AI in hydrodynamical models, in team LEMON at INRIA Montpellier. The project was studying the help deep learning could provide in the creation of precise and computationally cheap shallow water models, using it as a downscaling tool, and led to an publication.

OTHER WORK EXPERIENCE

Data science intern July - December 2020

Data science internship in Adequa (now Potions) a Parisian start-up aiming at enhancing in UX experience on clients' websites. Missions included the use of Google Analytics' API in order to implement data segmenting tools, the conception of statistical tests and regression models in order to analyze users' behaviour.

EDUCATION

- 2021 - 2022 MVA master at **École Normale Supérieure Paris-Saclay**
"Mathématiques, Vision et Apprentissage" master (Maths, Vision and Learning)
- 2018 - 2023 Engineer Degree at **École des Ponts ParisTech**
Top 5 French engineering school, in Mathematics and CS department
- 2015 - 2018 CPGE at **Lycée Joffre de Montpellier**
Intensive maths and physics courses to prepare engineering schools' contests

PUBLICATIONS

- [1] K. Bakong, V. Guinot, A. Rousseau, and G. Toulemonde, "Downscaling shallow water simulations using artificial neural networks and boosted trees," *Discrete and Continuous Dynamical Systems-Series S*, 2022.