Pascal SUNGU NGOY

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Education

PhD in Applied Mathematics for Life Sciences	Feb. 23 - Present
University of Douala, Douala, Cameroon	
MSc in Mathematics (Computational Option)	May 19 - April 21
The Pan African University Institute for Basic Sciences, Technology and Innovation (PAUSTI) and Jomo Kenyatta University of Agriculture and Technology (JKUAT), Nairobi, Kenya	
MSc in Mathematical Sciences	Aug. 17 - June 18
African Institute for Mathematical Sciences, Limbe, Cameroon	
Postgraduate diploma in Mathematics and Computer Science (Bac+5)	Oct. 09 - July 15
University of Lubumbashi, Lubumbashi, DRC	

Scholarships and Awards

Global Development Hub Fellowship	May 24 - July 24
Imperial College London, London, United Kingdom	
African Consortium in Modeling for Effective Vector Control (ACoMVeC) Scholarship	Feb. 23 - Present
Centre for Research in Infectious Diseases (CRID), Yaounde, Cameroon	
Pan African University Scholarship	May 19 - April 21
The Pan African University Institute for Basic Sciences, Technology and Innovation (PAUSTI) and Jomo Kenyatta University of Agriculture and Technology (JKUAT), Nairobi, Kenya	
African Institute for Mathematical Sciences Scholarship	Aug. 17 - June 18
African Institute for Mathematical Sciences, Limbe, Cameroon	

Training & Conferences

CIMPA School: Data-Driven Epidemiological Models — Current Trends and New Threats ⬩ 7–18 July 25

Meeting Activities

Core courses on adaptive dynamics; epidemic models with behavioural change; data analysis and model fitting in R; identifiability/observability; data-driven in-host models; and Bayesian statistics in epidemics. Contributed to a group project on Adaptive dynamics (supervisors: F. Nyabadza, D. M. Malonza).

Modern Statistics and Machine Learning for Population Health in Africa ⬩ 24th- 28th March 2025

Meeting Activities

Attended a hands-on training on probabilistic programming and advanced statistical modelling for population health, hosted at AIMS Cape Town and led by Imperial College London and partners. Topics included Bayesian workflows in Stan, hierarchical models, Gaussian processes, and infectious disease modelling with real-world applications in malaria and HIV.

Technical Vector Control Advisory Group (TVCAG) for Cameroon ⬩ March 28, 24

Meeting Activities

Participated in a consultative TVCAG meeting organized by CRID, contributing to the development of five operational research projects focused on enhancing malaria control strategies in Cameroon through mathematical modelling.

Malaria Modeling Symposium : AMMnet Cameroon Chapter ⬩ February 08, 24

Meeting Activities

I presented at the Malaria Modelling Symposium, a scientific event fostering networking and knowledge exchange among PhD students, early career researchers, and decision makers in malaria modelling. My talk focused on 'Modeling the impact of Indoor Residual Spraying on Malaria Disease,' contributing to discussions on vector control dynamics and interventions

Training of medical entomologists in mathematical modelling ⬩ October 5-6, 23

Meeting Activities

Participation in the Regional AMMnet event titled "Training of medical entomologists in mathematical modelling" held from October 5-6, 23, in Yaoundé, Cameroon.

PAMCA Annual conference and Exhibition ⬩ September 17-21, 23

Meeting Activities

Participated in a consultative TVCAG meeting organized by CRID at the 9th PAMCA Annual Conference and Exhibition held from September 17-21, 2023, at the Skylight Hotel, Addis Ababa, Ethiopia, under the theme "Reorienting surveillance and management in the context of emerging threats of disease vectors."

Teaching/Academic Experience

Part-time Lecturer Oct. 22 - Present

University of Lubumbashi (UNILU) and Don Bosco University of Lubumbashi (UDBL), Lubumbashi, DRC

Responsibilities

- Teaching and providing tutorials in the Mathematics and Computer Science department for the following unit: *Algorithms and Data Structures (BAC 2-UNILU)*.
- Teaching and providing tutorials in the Software Engineering department for the following unit: *Introduction to Artificial Intelligence (Bachelor 4 - UDBL)*.

Teaching Assistant Nov. 18 - Nov. 21

Nouveaux Horizons University (UNH), Lubumbashi, DR Congo

Responsibilities

- Teaching and providing tutorials to the Computer Science faculty and the School of Engineers in the following units: Algorithms and Data Structures, Python Programming, General Computer Science;
- Managing exam papers and grades for the Computer Science faculty, the School of Engineers, and the School of Architecture (First semester 2019);
- Co-supervising bachelor's level projects in the Computer Science faculty;
- Co-organizing the international conference on Artificial Intelligence (Deep Learning IndabaX DRC) - 2019.

Selected Publications

- Ngoy, P. S., Musumbu, K., & Gathungu, D. K. (2021). **A Mathematical Modeling Approach in Cybersecurity Using Deep Neural Learning.** International Journal of Advanced Research in Science, Engineering and Technology, Vol. 8, Issue 6, June 2021.
- Ngoy, P. S., Musumbu, K., & Gathungu, D. K. (2021, May). **Combining Epidemic Model and Deep Learning to Study Cyber Attacks.** In 2021 International Conference on Computer Communication and Artificial Intelligence (CCAI) (pp. 150-154). IEEE.
- Ngoy, P. S., Musumbu, K., & Wandji, N. (2021). **An Approach of Concept Lattice Theory in Data Mining and Its Applications.** Theory and Practice of Mathematics and Computer Science Vol. 7, 57-75.
- SUNGU, P., MUSUMBU, K. & WANDJI, N. (2019). **Concept Lattice Theory in Data Mining and its Applications.** IJRDO - Journal of Computer Science Engineering (ISSN: 2456-1843), 5(7), 01-10.

References

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