Joseph Junior Penlap Tamagoua

Inria centre at Université Côte d'Azur

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Education

University of Côte d'Azur (**UCA**)**,** Nice, France

Ph.D., Automation, *Signal and Image Processing,*   September 2025
- Thesis: Ecophysiological modeling of plant-nematode interactions: Understanding the origins and consequences of differential plant susceptibility
- Advisors: Frédéric Grognard, Valentina Baldazzi, Suzanne Touzeau
- Affiliated with Inria and INRAe research centers

African Institute for Mathematical Sciences (**AIMS**), Limbe, Cameroon

M.sc., Mathematical Sciences, *Data Science,*   June 2022
- Master Thesis: Modeling the dynamics of a forest environment: role of water cycle
- Advisor: Nathalie Verdière

University of Dschang (**UDs**), Dschang, Cameroon

M.sc., Mathematics, *Analysis,*   June 2021
- Master Thesis: Spaces of locally uniformly bounded functions and applications
- Advisor: Jean Louis Woukeng

B.sc., Mathematics and computer science,   July 2019

Research Interests

Development of mathematical models in population dynamics
- Dynamical systems (ODEs, PDEs)
- Mathematical analysis (model reduction, stability analysis)
- Numerical simulation (calibration, parameter estimation, control strategies)

Main applications
- Automatic control (estimation, identification, regulation, optimal control)
- Agro-ecology engineering for plant health protection
- Biology mathematical modeling
- Biological control, crop protection

Employment History

Research Assistant,   Oct 2022-Sep 2025

Teams: Inria (**Macbes** unit) & INRAE (ISA/**M2P2** unit)
- Investigating pest impacts on plant development
- Conducting fieldwork and tests on laboratory
- Writing reports and journal articles

Assistant Faculty,   Jan 2022-Apr 2025

Department of Mathematics, University of Côte d'Azur
- Acting as teaching assistant
- Evaluating student's final projects

Research Intern,   Apr 2019-July 2021

URMA (Mathematics Research Unit), University of Dschang

Teaching Experience

Teaching Assistant, University of Côte d'Azur, Department of Mathematics
- Mathematical Analysis (SLUMA603),   semester 2 – Fall 2023, 2024
- Linear Algebra (SPUM11),   semester 1 – Spring 2023

Associate Instructor, University of Dschang, Department of Mathematics and computer science
- Introduction to Statistics (STAT),   semester 1 – Spring 2021

Selected Talks & Posters

1. Mathematical Population Dynamics, Ecology and Evolution (MPDEE), Marseille, France, (Apr 2023). *Modeling plant-nematode interactions to understand plant tolerance*.

2. 14th Dynamical Systems Applied to Biology and Natural Sciences (DSABNS), Bilbao, Spain, (Feb 2023). *Ecophysiological modeling plant-nematode interactions to understand plant tolerance.*

3. Biocore seminar on automatic control and dynamical systems theory to artificial ecosystems, Porquerolles island in Hyères, France, (Oct 2022). *Some results in Agro-forestry*.

4. Contributed group talk, AIMS-Cameroon, Limbe, Cameroon, (March 2022). *Epistatic interactions between sickle-cell disease and alpha-thalassemia*.

Skills

Qualities	Teamwork, Problem solver, Leadership.
Languages	French (mother language), English (professional language).
Programming	Python, R, LaTeX, SageMath, Berkeley Madonna, Matlab.

Awards, Grants & Honours

INRAE-Inria PhD Fellowship,   Oct 2022-Sept 2025
Inria centre at Université of Côte d'Azur

INRAE-Inria Travel Grant,   Feb, Apr 2023
To PhD student to attend and present a contributed talk at DSABNS & MPDEE conferences

MasterCard Foundation Scholarship for studies at AIMS,   Sept 2021-July 2022
African Institute for Mathematical Sciences (AIMS)

President Paul Biya's academic excellence prize,   Dec 2018-19-20-21
Granted by the president of the Republic of Cameroon to the best students

National winner prize OUC Africa,   Jan 2020