Joseph Junior Penlap Tamagoua

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Education

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

Ph.D., Automation, *Signal and Image Processing,* Expected September 2025

- Dissertation: 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

- Infection disease modeling, evolutionary biology
- Population dynamics, population genetics
- Biology mathematical modeling
- Biological control, crop protection

Work Experience

Visiting researcher, Dec 2023

Plant Pathology Department (**Garrett's Lab**), University of Florida, United States

- under the framework of INRAE and UF/IFAS *Joint Linkage* partnership
- development of tools (Impact network analysis) for monitoring pest invasions

Research Assistant, Oct 2022-Sep 2025

Teams: Inria (**Macbes** unit) & INRAE (ISA/**M2P2** unit), France

- conducting fieldwork and tests on laboratory
- collection and evaluation of plant physiology data on crops (tomato, pepper, cucurbit)
- evaluation of nematode infestation data on crop roots
- writing reports and journal articles

Assistant Faculty, Jan 2022-Apr 2025

Department of Mathematics, University of Côte d'Azur, France

- acting as teaching assistant
- evaluating students' final projects

Research Intern, Apr 2019-July 2021

URMA (Mathematics Research Unit), University of Dschang, Cameroon

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. MacBiosCore seminar, Porquerolles Island, France, (Oct 2023). *Modeling plant-nematode interactions to understand plant tolerance*.
2. *Mathematical Population Dynamics, Ecology and Evolution (MPDEE), Marseille, France*, (Apr 2023). *Modeling plant-nematode interactions to understand plant tolerance.*
3. 14th Dynamical Systems Applied to Biology and Natural Sciences (DSABNS), Bilbao, Spain, (Feb 2023). *Ecophysiological modeling plant-nematode interactions to understand plant tolerance.*
4. Biocore seminar on automatic control and dynamical systems theory to artificial ecosystems, Porquerolles island in Hyères, France, (Oct 2022). *Some results in Agro-forestry*.
5. 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 students to attend and present a contributed talk at DSABNS & MPDEE conferences

MasterCard Foundation Scholarship for studies at AIMS, Sept 2021-July 2022
MSc Scholarship at 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

Volunteering

Scientific mediation addressed to high school students: *How mathematics act in our daily lives?*
Inria centre at Université of Côte d'Azur, France May 2023

Member of DS4H (Digital Systems for Humans) as a doctoral student
Inria centre at Université of Côte d'Azur, France Oct 2022-present

Designing motivational scientific quotes as part of giveback activities to society
AIMS-Cameroon, Cameroon Sept 2021-July 2022

Referees

PhD supervisors:

Frédéric Grognard
Researcher, Leader of Macbes Team
frederic.grognard@inria.fr
Inria (Macbes), Inrae (M2P2), CNRS

Valentina Baldazzi
Researcher
valentina.baldazzi@inrae.fr
Inria (Macbes), Inrae (M2P2)

Suzanne Touzeau
Researcher
suzanne.touzeau@inrae.fr
Inria (Macbes), Inrae (M2P2)

Teaching supervisors:

Stéphane Descombes
Full Professor
stephane.descombes@univ-cotedazur.fr
University of Côte d'Azur

Claire Scheid
Associate Professor
claire.scheid@univ-cotedazur.fr
University of Côte d'Azur