

# Joseph Junior Penlap Tamagoua

Inria centre at Université Côte d'Azur  
2004 route des Lucioles, 06902 Biot  
Sophia Antipolis, France

Email: [joseph.penlap@inria.fr](mailto:joseph.penlap@inria.fr)  
ORCID iD: 0000-0002-4151-7837  
Homepage: [joseph-penlap.github.io](https://joseph-penlap.github.io)

## 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 Grogard, 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

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

## Employment History

---

### Research Assistant,

Oct 2022-Sep 2025

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

- 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

- 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. 14<sup>th</sup> 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, L <sup>A</sup> T <sub>E</sub> X, SageMath, Berkeley Madonna, Matlab.

## Awards, Grants & Honours

---

<b>INRAE-Inria PhD Fellowship</b> , Inria centre at Université of Côte d’Azur	Oct 2022-Sept 2025
<b>INRAE-Inria Travel Grant</b> , To PhD students to attend and present a contributed talk at DSABNS & MPDEE conferences	Feb, Apr 2023
<b>MasterCard Foundation Scholarship for studies at AIMS</b> , MSc Scholarship at African Institute for Mathematical Sciences ( <b>AIMS</b> )	Sept 2021-July 2022
<b>President Paul Biya’s academic excellence prize</b> , Granted by the president of the Republic of Cameroon to the best students	Dec 2018-19-20-21
<b>National winner prize OUC Africa</b> ,	Jan 2020