

Education

- Oct 2018 – Dec 2022** **PhD in Applied Mathematics**, *University of Leeds*, Leeds, United Kingdom,
Dissertation: "Integrable initial-boundary value problems and solution methods for the nonlinear Schrödinger equation".
Supervisor: Dr Vincent Caudrelier.
- Aug 2017 – Jun 2018** **Masters in Mathematical Sciences**, *University of the Western Cape*, Cape Town, South Africa,
Dissertation: "Maximum principle for weak solutions of reaction-diffusion equations".
Supervisor: Professor Roumen Anguelov.
I graduated Cum Laude.
- Oct 2010 – Jun 2015** **Bachelor in Mathematical Sciences**, *University of Kinshasa*, Kinshasa, Dem. Rep. of the Congo,
Dissertation: "Sur la programmation linéaire semi-infinie".
Supervisor: Professor Mubenga Kamputo.
I graduated top of my class (87%).

Scholarships

- PhD Scholarship** **Full-Time International Doctoral Studentship**, *School of Mathematics*, University of Leeds.
- Master Scholarship** **AIMS Bursary**, *African Institute for Mathematical Sciences (AIMS)*, Cape Town, South Africa.
I was awarded this bursary to support my master's degree at the University of the Western Cape.

Publication

- 2021** **Nonlinear mirror image method for nonlinear Schrödinger equation: Absorption/emission of one soliton by a boundary**, *Vincent Caudrelier, Nicolas Crampé, Carlos Mbala Dibaya*, *Studies in Applied Mathematics*, October 2021.

Research activity

Academic talks

- Oct 2022** **Integrable Systems seminar**, *Speaker*, School of Mathematics, University of Leeds, United Kingdom.
Title: "Nonlinear mirror image method for the (focusing) nonlinear Schrödinger equation with time-dependent integrable boundary conditions".
- Feb 2022** **Applied PGR Seminar series**, *Speaker*, School of Mathematics, University of Leeds, United Kingdom.
Title: "Inverse scattering transform for the focusing nonlinear Schrödinger equation with nonzero boundary conditions".
- July 2021** **4th IMA Conference on Nonlinearity and Coherent Structures**, *Speaker*, Institute of Mathematics and its Applications, United Kingdom.
Title: "Nonlinear mirror image method for the nonlinear focusing Schrödinger equation with time-dependent dependent integrable boundary conditions".
- Oct 2020** **Applied PGR Seminar series**, *Speaker*, School of Mathematics, University of Leeds, United Kingdom.
Title: "Inverse scattering transform for the nonlinear Schrödinger equation with zero boundary conditions".
- Dec 2017** **Model Theory Module**, *Speaker*, AIMS, Cape Town, South Africa.
Title: "Filters and ultrafilters".

Conferences and workshops attended

- June 2022** **Poisson structures and Noncommutative Integrability**, *Participant*, University of Kent, Canterbury, United Kingdom.
- June 2022** **Postgraduate research conference 2022**, *Participant*, School of Mathematics, University of Leeds, United Kingdom.
- May 2022** **New Trends in Lagrangian and Hamiltonian Aspects of Integrable Systems**, *Participant*, School of Mathematics, University of Leeds, United Kingdom.
- June 2019** **Applied PG Conference**, *Participant*, School of Mathematics, University of Leeds, United Kingdom.
- May 2019** **Leeds Workshop on Brackets, reduction, and integrability**, *Participant*, School of Mathematics, University of Leeds, United Kingdom.

Apr 2019 **Integrable Systems in Newcastle: Integrability and Applications**, *Participant*, Northumbria University, Newcastle, United Kingdom.

Jan 2018 **Women in Discrete Mathematics and its Applications**, *Participant*, AIMS, Cape Town, South Africa.

Technical skills

Quantitative finance	Pricing derivatives (Forward & futures contracts, Options), Stochastic calculus, Numerical simulation (Monte Carlo)
Software	Microsoft 365 (Office), Excel, $\text{\LaTeX}$, Maple, Singular
Data science	Statistical techniques, Pandas, NumPy, Scikit-Learn, SQL
Programming	Python (intermediate to advanced), Fortran (Basics), C (Basics)
OS	Windows, Linux/Ubuntu

Coding projects

Dec 2022 **A* search algorithm: visualization in Python**, *Personal training*.

- This algorithm searches for the shortest path between two given points.
- I used Pygame to visualise the execution of the algorithm.

Apr 2022 **Wheel of fortune in Python**, *Coursera course*.

- This project is an imitation of the popular tv show called The Wheel of fortune.
- I implemented all the necessary classes to allow the game to function.

Teaching experience (~ 1000 hours)

Sep – Dec 2022	Mathematical Biology , <i>marking</i> , School of mathematics, University of Leeds.
Sep – Dec 2022	Analytic Solutions of Partial Differential Equations , <i>marking</i> , School of mathematics, University of Leeds.
Sep – Dec 2022	Elementary Differential Calculus , <i>tutoring and marking</i> , School of mathematics, University of Leeds.
Jan – May 2022	Real Analysis , <i>tutoring and marking</i> , School of mathematics, University of Leeds.
Sep – Dec 2021	Vector Calculus , <i>tutoring and marking</i> , School of mathematics, University of Leeds.
Jan – May 2021	Real Analysis , <i>tutoring and marking</i> , School of mathematics, University of Leeds.
Jan – May 2021	Calculus of Variations , <i>tutoring and marking</i> , School of mathematics, University of Leeds.
Sep – Dec 2020	Vector Calculus , <i>tutoring and marking</i> , School of mathematics, University of Leeds.
Sep – Dec 2020	Elementary Differential Calculus , <i>marking</i> , School of mathematics, University of Leeds.
Jan – May 2020	Nonlinear Differential Equations , <i>tutoring and marking</i> , School of mathematics, University of Leeds.
Sep – Dec 2019	Analytic Solutions of Partial differential equations , <i>marking</i> , School of mathematics, University of Leeds.
Jan – Dec 2016	Functional analysis , <i>tutoring and marking</i> , Department of Mathematics and Computer Science, University of Kinshasa.
Jan – Dec 2016	Real analysis , <i>tutoring and marking</i> , Department of Mathematics and Computer Science, University of Kinshasa.
Jan – Dec 2016	Measure theory , <i>tutoring and marking</i> , Department of Mathematics and Computer Science, University of Kinshasa.

Teaching training

Oct 2019 **Supporting Postgraduates who Teach Mathematics & Statistics**, International Centre for Mathematical Sciences, Edinburgh, United Kingdom.

Sep 2019 **Foundations in teaching**, University of Leeds, United Kingdom.

Administrative experience

2020 – 2021 **Applied PGR Seminar series**, *Member of the organisation committee*, School of mathematics, University of Leeds, Academic year 2020-21.

Languages

Lingala	Native speaker
French	Fluent

Technical skills

Quantitative finance	Pricing derivatives (Forward & futures contracts, Options), Stochastic calculus, Numerical simulation (Monte Carlo)
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Extra Curriculars

- Apr 2020** **Fund raising campaign**, *Campaign manager*, Go Fund Me platform.
In the middle of the first wave of Covid19, I teamed up with two friends to help raise funds for children in orphanages based in Kinshasa.
- 2019 – 2022** **Youth for Development Foundation (YouDeF)**, *Active member*, Kinshasa, Dem. Rep. of the Congo.
YouDeF is an NGO based in Kinshasa that supports young people by teaching them practical skills and helping them become productive for the local community.