

Curriculum Vitae

PERSONAL
INFORMATION

Voalaza Mahavily Romuald AUBERT

📍 African Institute of Mathematical Sciences
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🔗 [aubert-svg.github.io](https://github.com/aubert-svg)

PROFILE

With an interest in combinatorics and geometry, I am currently pursuing a PhD in Mathematical Sciences at Clemson University, USA. I previously pursued advanced studies in Madagascar before being awarded scholarships to study at AIMS South Africa and ICTP Italy.

WORK EXPERIENCE

Dates	12 Jan 2026 – June 2026
Occupation or position held	Tutor / Teaching Assistant
Name and address of employer	African Institute for Mathematical Sciences (AIMS Cameroon)
Main activities and responsibilities	Assist student, doing tutorial session, ensure the communication between students and lecturers.
Type of business or sector	Education
Dates	Jan 2020 – Present
Occupation or position held	Online Tutor / Teaching Assistant
Name and address of employer	Self-employed, Fianarantsoa, Madagascar (online), affiliated with SERTP Service
Main activities and responsibilities	Online tutoring for first- and second-year students in Mathematics, Economics–Management, and Computer Science (mathematics, algorithms, programming), including explaining course content, solving exercises, and preparing students for exams.
Type of business or sector	Higher education / Online mentoring
Dates	Mar 2019 – Aug 2023
Occupation or position held	Leader and Teacher
Name and address of employer	SERTP Service, Fianarantsoa, Madagascar
Main activities and responsibilities	Student support and preparation for post-secondary education, including mentoring to bridge knowledge gaps before university and helping students adapt to the university environment and systems.
Type of business or sector	Education / Mentoring
Dates	Dec 2016 – Apr 2019
Occupation or position held	Responsible and Missionary
Name and address of employer	Ziona Mahafinaritra, Madagascar
Main activities and responsibilities	Empowering youth to pursue the path of truth and good conduct.
Type of business or sector	Community outreach

EDUCATION AND TRAINING

Dates	Aug 2026 – Present
Title of qualification	PhD in Mathematical Sciences
Institute or University	Graduate School, School of Mathematical and Statistical Sciences, Clemson University, South Carolina, USA
Dates	Sept 2024 – Aug 2025
Title of qualification	Pre-PhD Programme (Postgraduate Diploma Programme) ICTP
Institute or University	Abdus Salam International Centre for Theoretical Physics (ICTP), Trieste, Italy
Dates	Sept 2023 – Jul 2024
Title of qualification	Structured Master AIMS in Mathematical Sciences (Distinction, Top Student)
Institute or University	Stellenbosch University at the African Institute for Mathematical Sciences (AIMS South Africa), Cape Town, South Africa
Dates	Aug 2021 – Oct 2025
Title of qualification	Master in Pure Mathematics (Valedictorian, first-class honours)
Institute or University	Faculty of Sciences, University of Fianarantsoa, Madagascar
Dates	Apr 2018 – Jul 2021
Title of qualification	Bachelor in Pure Mathematics (Valedictorian, first-class honours)
Institute or University	Faculty of Sciences, University of Fianarantsoa, Madagascar
Dates	Apr 2015 – Jul 2019
Title of qualification	Bachelor in Management and Economics
Institute or University	Faculty of Law, Economics, Management and Social Sciences, University of Fianarantsoa, Madagascar

RESEARCH INTERESTS

Combinatorics:	Enumerative combinatorics, Analytic combinatorics, Probabilistic combinatorics
Geometry:	Toric algebraic geometry, Differential geometry
Computational Mathematics:	Computational algebraic geometry

PUBLICATIONS

2026	Explicit Formulas and Combinatorial Interpretation of Triangular Arrays via Weighted Paths (with Benjamin Randrianirina). <i>Enumerative Combinatorics and Applications (ECA)</i> , 2026. https://doi.org/10.54550/ECA2026V6S3R20 .
2026	Triangular Arrays Using Context-Free Grammar (with Benjamin Randrianirina). Preprint, <i>arXiv:2512.01005</i> , 2024. https://doi.org/10.48550/arXiv.2512.01005 .
2026	Asymptotic Study of some GPK Numbers, Triangular Arrays . <i>Draft available upon request</i> .

THESES

Oct 29, 2025	Combinatorics of Triangular Recurrence Sequences — Faculty of Sciences, Fianarantsoa. Supervisor Dr. Benjamin RANDRIANIRINA
Aug 14, 2025	Lie Groups and Lie Algebras: Curvatures and Representations — ICTP. Supervisor Prof. Claudio Arezzo and Sinha Shubham
Jul 16, 2024	Free Objects in Algebra and Topology — AIMS South Africa. Supervisor Prof. David Holgate

HONOURS AND AWARDS

Nov 2025	Valedictorian (Best student in Faculty of Sciences, Master's), University of Fianarantsoa.
Sept 2024 – Aug 2025	Postgraduate Diploma Scholarship, ICTP (UNESCO Category 1 Institute), Trieste, Italy.

- Jul 2024 Academic Excellence Award (Distinction, Top Student), AIMS South Africa, Cape Town.
- Sept 2023 – Jul 2024 Mastercard Foundation Scholar, AIMS South Africa, Cape Town.
- Nov 2022 Valedictorian (Best student in Faculty of Sciences, Master's), University of Fianarantsoa.
- Jul 2014 Distinction: Top student from high school, Collège Sacré-Coeur Toliara Centre, Toliara, Madagascar.
- Winner: Rallye Mathématique, Collège Sacré-Coeur Toliara Centre, Toliara, Madagascar.

PERSONAL SKILLS

Languages	Malagasy (native), English (Advanced), French, German(beginner).
Digital skills	Python; Julia; R; SageMath; Maple; Scilab; Singular; Algorithm design; Programming.
Teaching/Leadership	Teaching, mentoring, leadership, coordination.

SCHOOLS AND WORKSHOPS

Nov 24 – Nov 28, 2025	A-PIC: Probability, Information Theory, Computing — Kigali, Rwanda.
Apr 17 – Apr 20, 2023	Growing Africa's Capacity for Science Communication Impact — Cape Town, South Africa.
Dec 8–11, 2023	Topology for Tomorrow (Pointfree Topology) — Cape Town, South Africa.
Nov 20 – Dec 1, 2023	CIMPA School: Blockchain in Theory and Real Applications — Cape Town, South Africa.

CLASS PRESENTATIONS (SHORT TALKS)

Apr 7, 2024	Compactness Theorem — Model Theory Class, AIMS South Africa, Cape Town.
Apr 7, 2024	Elliptic Curves over Finite Fields — Cryptography Class, AIMS South Africa, Cape Town.
Jan 26, 2024	Hilbert's Nullstellensatz — Computer Algebra Class, AIMS South Africa, Cape Town.
Dec 17, 2023	Jacobi Iterative Method — Verified Computation Class, AIMS South Africa, Cape Town.
Dec 7, 2023	Group Action — Algebraic Methods Class, AIMS South Africa, Cape Town.
Nov 16, 2022	Shortest path — Graph Theory Class, Faculty of Sciences, University of Fianarantsoa.

REFERENCES

Dr. Randrianirina Benjamin — University of Fianarantsoa, Faculty of Sciences
rabezand@gmail.com

Prof. Claudio Arezzo — ICTP Abdus Salam, Mathematics Department, Italy
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Dr. Shubham Sinha — ICTP Abdus Salam, Mathematics Section
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Prof. Lothar Gottsche — ICTP Abdus Salam, Mathematics Department, Italy
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Prof. David Holgate — University of the Western Cape/AIMS South Africa
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Dr. Randriamparany Joelson — University of Fianarantsoa, Faculty of Sciences
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