

“Ability is what you’re capable of doing. Motivation determines what you do. Attitude determines how well you do it.” - Lou Holtz

Brief Introduction

Lucian Talu Mayabi is hardworking with internal drive to deliver, enthusiastic, and passionate person with excellent academic, leadership and interpersonal skills. She believes in teamwork and actively performs with any cohort/group. Lucian champions for transparency, integrity and is always guided by virtues both at her professional spheres and interpersonal level. As a futuristic individual, she capitalizes on any single opportunity that surfaces across and equally loves venturing in several places of her desired interests. Lucian is self-driven, upright, and prosperous academia, who aims at successfully translating individual learners into successful people in the education path of their choice.

Research Interests

Modeling: Disease modelling.

Population and Community Dynamics Models: Predator - Prey Models.

Education: Contemporary Issues facing Education Sector in Kenya.

Work Experience

- 02.02.2025–
Present **STEM Educator, Instructional Designer, and Teacher Trainer, Innovations in Development and The Mathematical Sciences (INNODEMS), Kakamega, Kenya**
Teaching, Creation of teaching and learning resources.
Detailed Roles:
- Conducting capacity building training for STEM teachers.
 - Creating tutorials on the use of Statistical software (R-Instat).
 - Planning and facilitating after-school programmes: STEM camps, Coding camps, and Math camps.
 - Developing teaching and learning resources for the Kenyan Curriculum including uses of the software packages like GeoGebra, STACK and R-Instat.
 - Championing for Physics Education Technology (PhET) Interactive Simulations use by STEM teachers.
- 01.01.2025–
Present **Volunteer at Curriculum Designer and Facilitator, EdTech Guardian Hub, Nairobi, Kenya**
Designing digital literacy and AI-focused curricula, and facilitating teacher training sessions .
Detailed Roles:
- Collaborating with experts to design digital literacy and AI-focused curricula.
 - Facilitating teacher training sessions and masterclasses, introducing modern EdTech tools and practices.
 - Collecting feedback to refine training materials and improve teacher engagement.
 - Pilot testing the curriculum in schools and document findings.
- 01.01.2025–
Present **Project Partner, Kenya, University of Bonn, German**
Facilitating mathematical activities .
Detailed Description: We have been organizing online workshops in English with children from Kenya about once a month. This offer will be further expanded into a larger international, intercontinental math club with lecturers and educators from Africa and Europe. The aim is an international exchange in the field of extracurricular mathematical education for gifted children. We want to inspire each other, adopt ideas, learn from each other's cultures and simply have fun with math together, across all borders!

- 01.10.2024– **STEM Program Manager**, *Riley Orton Foundation*, Kisumu, Kenya
 31.12.2024 Responsible for program instruction, coordination, data collection and reporting, as well as Grant writing .
Detailed Roles:
- Designing and delivering inquiry-based STEM lessons.
 - Facilitating after-school STEM sessions and boot camps.
 - Collaborating with partner school teachers to align the AKILI STEM Mentorship Program with classroom instruction.
 - Collecting data to monitor program effectiveness and provide mentorship.
 - Maintaining knowledge of STEM education trends and develop resources for creative coding, robotics, and app development for students aged 9-18.
 - Overseeing inter-school STEM competitions, career fairs, and mentor participation in STEM events.
 - Managing budgets, tracking expenditures, and developing work plans for the program.
 - Building relationships with donors and lead fundraising efforts.
 - Developing quality grant proposals for STEM programs and identify funding sources.
- 01.04.2024– **Asset Trial Teacher**, *LabXchange*, Harvard University, Cambridge, Massachusetts
 20.07.2024 Evaluating Mathematics content
- 26.10.2023– **Teacher Ambassador**, *LabXchange*, Harvard University, Cambridge, Massachusetts
 Present Transforming science education
- 01.08.2023 **Research Assistant**, *Innovations in Development and The Mathematical Sciences (INN-*
 –01.08.2024 *ODEMS)*, Kakamega, Kenya, Conducted qualitative data analysis for the research project titled: “*Digital Maths Activities and Parent-Child Maths Playful Learning with Early Family Maths (EFM) App: A Kenyan Pilot Study*”, a collaborative effort between INNODEMS and Kenyatta University.
- Detailed Roles:**
- Organizing and facilitating focus group discussions and personal interviews with participants, ensuring data reliability and integrity.
 - Recording, transcribing, and analyzing qualitative data using thematic analysis techniques to uncover insights on early math learning interventions.
 - Exploring the impact of the EFM app on digital mathematics activities and parent-child interactive learning in Kenyan contexts.
 - Producing a detailed research reports, contributing to the dissemination of findings to project stakeholders and collaborators.
- Detailed Achievements:**
- Strengthened research methodologies by integrating practical feedback loops for qualitative analysis.
 - Contributed actionable insights to improve the adoption of digital learning tools in family and educational settings.
- 01.06.2023– **Swahili Translator**, *Physics Education Technology (PhET) Interactive Simulations*
 Present *Swahili Translator*, Kenya
 Translation of the Physics Education Technology (PhET) Interactive Simulations in HTML format from English to Swahili language.
- 01.01.2023– **CBC Content Creator for Science**, *Ontum Education*, Yeshwantpur, Bangalore, India
 31.12.2023 Ontum Master Science Champion.
Detailed roles:
- Offering a holistic approach to education that extends beyond traditional exams.
 - Creation of CBC content for science subject.
- 01.07.2022– **Competency Based Curriculum (CBC) Content Creator**, *Content Creator at Eneza*
 01.08.2023 *Education*, Kenya
 Creation of CBC content.
Detailed Role:
- Creation of formative and summative assessment tests for integrated science for grades 4, 5, and 6.
- 08.08.2022– **Presiding Officer**, *Independent Electoral and Boundaries Commission*, Kenya
 18.08.2022 Election Official

- 08.02.2022– **Mathematics Specialist**, *African Maths Initiative*, Kakamega, Kenya
 30.08.2024 Teaching, Creation of teaching and learning resources.
Detailed Roles:
- Incharge of Kangaroo Maths competitions in Kenya.
 - Conducting capacity building training for STEM teachers.
 - Developing Supporting Africa Maths Initiative (SAMI) resources for students.
 - Creating tutorials on the use of Statistical software (R-Instat).
 - Engaging teachers and students with the created SAMI resources.
 - Setting up new maths clubs/improving the existing maths clubs in schools.
 - Planning and facilitating maths camps.
 - Developing teaching and learning resources for the Kenyan Curriculum including uses of the software packages like GeoGebra, STACK and R-Instat.
 - Championing for Physics Education Technology (PhET) Interactive Simulations use by STEM teachers.
- 08.01.2022– **Voter Registration Clerk**, *Independent Electoral and Boundaries Commission*, Kenya
 08.02.2022 Election Official
- 25.10.2021– **Voter Registration Clerk**, *Independent Electoral and Boundaries Commission*, Kenya
 25.11.2021 Election Official
- 01.05.2020– **Undergraduate Examination Supervisor**, *Masinde Muliro University of Science and Technology*, Kenya
 present School of Education(SEDU)
- 30.04.2018– **Teacher**, *Moi Girls' High School - Vokoli*, Kenya
 29.08.2018 Teaching practice in Mathematics and Biology (with a score of A (plain) in both.)
- 08.08.2017– **Polling/Counting Clerk**, *Independent Electoral and Boundaries Commission*, Kenya
 08.10.2017 Election Official
- 01.05.2015– **Teacher**, *Ebusakami Girls' High School*, Kenya
 25.08.2015 Teaching Mathematics and Biology (with a score of A (plain) in both.)

Membership to Professional Bodies

- *International Mathematical Union*: Member.
- *European Mathematics Society*: Member.
- *Society for Industrial and Applied Mathematics*: Member.
- *Wildlife Clubs of Kenya*: Member.

Education

- 01.03.2025– **Certificate in Data Science and Artificial Intelligence**, *Open University of Kenya*,
 31.05.2025 Kenya
 Courses involved: Soft Skills and Entrepreneurship, Data Science and Artificial Intelligence.
- 01.01.2023– **Doctor of Philosophy in Applied Mathematics**, *Masinde Muliro University of Science and Technology*, Kenya, *Ongoing, done with coursework*
 Present Courses involved: Recent Trends in Mathematical and Computational Biology, Recent Trends in Operations Research and Optimization, Recent Trends in Data Assimilation, and Recent Trends in Numerical Analysis and Scientific Computing.
- 09.02.2020 – **Master of Science in Applied Mathematics**, *Masinde Muliro University of Science and Technology*, Kenya, *Distinction*
 09.12.2022 Courses involved: Partial Differential Equations, Ordinary Differential Equations, Numerical Analysis, Dynamical Systems, Functional Analysis, Applied Complex Analysis, Fluid Mechanics, Biomathematics and Methods in Applied Mathematics

- 29.08.2015 – **Bachelor of Education (Science)**, Masinde Muliro University of Science and Technology,
06.12.2019 Kenya, *Second Class Honours, upper division*
Courses involved: Calculus, Elementary Applied Mathematics, Linear Algebra, Probability and Statistics, Complex Analysis, Ordinary Differential Equation(s), Partial Differential Equation(s), Real Analysis, Fourier Series, Vertebrate zoology, Invertebrate zoology, Genetics, Plant Taxonomy, Animal Physiology, Bio-statistics, Entomology, Ethnobotany, Animal Behavior, Plant Biochemistry, Parasitology, Inclusive education, Guidance and Counseling, Sociology of Education, Philosophy of Education, History of Education, Entrepreneurship, Mathematics Education, School Practice, Biology Education, Psychology, Curriculum Studies, Communication Skills, Fundamentals of Computing.
- 04.02.2011 – **Kenya Certificate of Secondary Education (KCSE)**, Ebusakami Girls' High School,
05.12.2014 Luanda, Kenya, *Grade B+ (72/84 Points)*
Subjects involved: English, Swahili, Mathematics, Physics, Biology, Chemistry, Geography, and Agriculture
- 05.02.2002 – **Kenya Certificate of Primary Education (KCPE)**, Itumbu Primary School, Luanda,
16.11.2010 Kenya, *312/500 Marks*
Subjects involved: English, Swahili, Mathematics, Social Studies, Science, and Christian Religious Education
- 01.01.2001 – **Early Childhood Education (ECDE)**, Mwakitawa Nursery School, Voi, Taita Taveta,
16.12.2001 Kenya, *Pass*
Subjects involved: Reading and Writing

Doctoral Thesis

- Title *Stochastic Modelling of Predator - Prey Dynamics in a Three - Patch Ecosystem with Optimal Harvesting.*
- Supervisor Dr. David Angwenyi
- Supervisor Dr. Duncan Oganga

Masters Thesis

- Title *SIR Model for COVID-19 Dynamics Incorporating Clinical Management*
- Supervisor Dr. Joyce Kagendo Nthiiri
- Supervisor Dr. Frankline Tireito
- Supervisor Dr. Tecla Sum

List of Publications

- [1] **Lucian Talu Mayabi**, Joyce Kagendo Nthiiri and Frankline Tireito (2022) *SIR Model for COVID-19 Dynamics Incorporating Clinical Management*. Journal of Advances in Mathematics and Computer Science. DOI:<https://doi.org/10.9734/jamcs/2022/v37i530452>

Research Supervision & Training

- 2020–present **Mentoring Undergraduate students in their research**
- Undergraduate final year project on *SIR Model for COVID-19 Dynamics incorporating Social Distance*, to completion.
 - Undergraduate final year project on *Time series analysis on the impact of public debt on inflation in Kenya*, to completion.

Conferences, Workshops, Seminars and Summer-schools

- 16.12.2024 – Facilitated the 8th Annual STEM Youth BootCamp held at Nelson Mandela Institute of
20.12.2024 Science and Technology, Arusha, Tanzania.
- 28.11.2024 – Facilitated a two day STEM camp held at Daraja Academy in Nanyuki, courtesy of the
29.11.2024 Human Practice Foundation.

- 30.10.2023 – Attended a two day workshop on Monitoring and Evaluation tools held at Royal Tulips
31.10.2023 Hotel Conference Hall, courtesy of Amplify Girls organization.
- 12.08.2024 – Attended and Did a presentation on *Enhancing Mathematics Education: Evaluating Faculty Training for STACK Integration in African Universities* during the 2nd STACK conference
16.08.2024 for undergraduate Mathematics held at the Technical University of Kenya.
- 15.11.2023 – Facilitated a one day STEM camp held at Lewa Wildlife Conservancy, courtesy of the
15.11.2023 Human Practice Foundation.
- 21.08.2023 – Facilitated the Kenya Math Camp held at Nyarongi SDA Church, Homabay, Kenya.
25.08.2023
- 07.08.2023 – Facilitated a training for the STEM Teachers held at AKILI STEMarts Academy, Kisumu,
08.08.2023 Kenya.
- 24.07.2023 – African Mathematical School on Mathematical Modeling of Chemical Reaction Networks,
28.07.2023 University of Nairobi, Kenya.
- 26.06.2023 – Facilitated the 7th Annual STEM Youth BootCamp held at STEM Park, Tanga, Tanzania.
30.06.2023
- 19.06.2023 – Facilitated the 1st STACK conference for undergraduate Mathematics held at Masinde
23.06.2023 Muliro University of Science and Technology.
- 09.06.2023 – Facilitated a training for the STEM Teachers held at Enaitoti, Maasai Mara, Narok County.
10.06.2023
- 18.05.2023 – Attended and Did a presentation during the 2nd World Conference on Transformative
20.05.2023 Education (WCTE) for the Global Institute for Transformative Education (GITE) held at
University of Cape Coast, Ghana.
- 08.05.2023 – Facilitated the Physics Education Technology (PhET) Interactive Simulation Conference
10.05.2023 during the STEM Teachers Training Program held at Lewa Wildlife Conservancy.
- 16.01.2023 – Facilitated the Kenya Math Camp held at AKILI STEMarts Academy, Kisumu, Kenya.
20.01.2023
- 12.12.2022 – Facilitated the Kenya Math Camp held at Kongoni Community Library, Likuyani Con-
16.12.2022 stituency, Kakamega, Kenya.
- 04.07.2022 – Facilitated the STACK Training workshop held at Maseno University.
08.07.2022
- 08/2019 Attended Integrity Organization Virtues Training Programme held at Masinde Muliro
University of Science and Technology.
- 03/2019 Attended KIPPRA Mentorship Programme for Universities held at Masinde Muliro Uni-
versity of Science and Technology.

Honours & Awards

- 2025 Awarded a scholarship by KIEP SKIES to undertake a Certificate Course in Data Science
and Artificial Intelligence at Open University of Kenya (OUK).
- 2015 Ebusakami Way Forward Award for outstanding academic achievement in KCSE 2014.
- 2015 Awarded a Certificate in Computer Systems and Application by Western Institute of
Professional Studies.

Leadership Experience

- 01.06.2013 – Senior Academic Prefect, Ebusakami Girls' High School.
01.06.2014
- 01.06.2012 – Junior Academic Prefect, Ebusakami Girls' High School.
01.06.2013

Languages

English fluent

Swahili fluent

Skill matrix

■ ■ ■ ■ ■ basic knowledge

■ ■ ■ ■ ■ intermediate knowledge with some project experience

■ ■ ■ ■ ■ extensive project experience

■ ■ ■ ■ ■ deepened expert knowledge

■ ■ ■ ■ ■ expert / specialist

	Level	Skill	Years	Comment
Language:	■ ■ ■ ■ ■	Python	5	<i>I have an online certificate in Python (Programming language) from Grok Learning.</i>
Softwares	■ ■ ■ ■ ■	R-Instat	5	<i>I have been doing statistical data analysis using R-Instat.</i>
	■ ■ ■ ■ ■	GeoGebra	5	<i>I have used GeoGebra software to do some graphical analysis especially during math camps.</i>
	■ ■ ■ ■ ■	Python	5	<i>I have done a number of data analysis and visualization using Python software.</i>
	■ ■ ■ ■ ■	MATLAB	4	<i>I am proficient in MATLAB, and I have taught solving PDEs and ODEs using MATLAB.</i>
	■ ■ ■ ■ ■	L ^A T _E X	4	<i>I use L^AT_EX to make exams, resumes, journal articles, flyers, minutes and letters.</i>
STACK:	■ ■ ■ ■ ■	R	3	<i>I have been doing statistical analyses using R.</i>
	■ ■ ■ ■ ■	STACK	4	<i>I use STACK to author higher learning assessment tests including mastery and content quizzes.</i>
Data Analysis	■ ■ ■ ■ ■	Statistical Analysis	4	<i>Done a number of analyses using SPSS, R and R-Instat.</i>
	■ ■ ■ ■ ■	Research skills	4	<i>Proficient in conducting qualitative and quantitative research to inform program strategies and evaluate impact effectively.</i>

Referees

Referee 1

○ Dr. David Angwenyi
(dangwenyi@mmust.ac.ke)
Department of Mathematics, MMUST

Referee 2

○ Mrs. Emily Fleming
(emilyfleming80@gmail.com)
Director, SAMI

Referee 3

○ Mr. Zachariah Mbasu
(zmbasu@gmail.com)
Director, INNODEMS

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