Curriculum Vitae
Kayode Oshinubi
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Medicine, University Grenoble Alpes (UGA), 38700 La Tronche, France.
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1 Personal Details

Name: OSHINUBI, Kayode

Mobile: +33766760529

Current position: Visiting Researcher

2 Education

2022   • Doctor of Philosophy in Applied Mathematics.
                  Universite Grenoble Alpes, France.
Title: "Mathematical and Statistical Modeling of Epidemic Data".
2015   • Masters of Science in Mathematics with Distinction (Top 5%).
                  University of Ilorin, Nigeria.
Title: "Free Vibration of Shear beam on Winkler Foundation Using differential Transform Method."
2013   • Bachelors degree in Mathematics with Second class upper with honors (Top 2%).
                  Ekiti State University, Nigeria.
Title: "Solving Hypergeometric Differential Equations Using Frobenius Method".

3 Employment History

- From January 2023   Postdoctoral researcher at Northern Arizona University, USA.
- November 2022 – till date   Visiting researcher at Bielefeld University, Bielefeld Germany.
- June 2022 – August 2022   Visiting researcher at Oxford University, Oxford United Kingdom.
- October 2019 – October 2022   Doctoral researcher at Université Grenoble Alpes, France.
- Since September 2016   Lecturer at Lagos state University, Lagos Nigeria. (Study Leave).
- April 2016 – April 2018   Associate Lecturer at Caleb University, Lagos Nigeria.
- November 2016 - November 2018   Associate Lecturer at Caleb Business School, Lagos Nigeria.
- October 2014 – December 2015   Masters Student at University of Ilorin, Nigeria.
- July 2013 – June 2014   Teaching Assistant at Bells University of Technology, Otta Nigeria.

4   Research since 2012

- Forecasting epidemic dynamics using spatial models
  Postdoctoral researcher position project at Northern Arizona University, USA.
- Modeling complex population dynamics in ecology and evolution
  Visiting researcher position project at Bielefeld University, Germany.
- Mathematical and statistical modeling of epidemic data. PhD thesis,
  Université Grenoble Alpes, France.
- Mathematical and statistical modeling of cycle threshold.
  Visiting researcher position project at Oxford University, United Kingdom.
- Towards personalized health monitoring (Longitudinal data and Biomarkers)
  Study group mathematics with industry, University of Twente, Netherlands.
- Modelling of COVID-19 and infectious diseases.
  Research collaboration with some colleagues in Nigeria and across the globe.
- Sea Routes: Classification of Vessel state transition in ports.
  SEME Mathematics week group project, Aix-Marseille University, France.
- Intercultural Science-Art Project 'Magritte Meet Science' at HLF fellowship.
- Solving hypergeometric differential equations using frobenius method. B.Sc.
  project, Ekiti State University, Nigeria.
- Free vibration of shear beam on Winkler foundation using differential
  transform method. MSc. thesis, University of Ilorin, Nigeria.

5   Research Interest, Skills and Publications

5.1   Research Interest

- Mathematical and Statistical Modeling.
- Data Analysis, Machine Learning and Deep Learning.
- Biomathematics and Biostatistics.
- Disease Ecology, Epidemiology and Infectious Diseases Modeling.
- Computational and Applied Mathematics.
- Numerical Methods, Fractional Derivatives and Ordinary Differential Equations.
- Numerical, Mathematical and Statistical Analysis.

5.2   Skills (https://github.com/Honkay)

- Data analyst, modeler and visualization.
- R and Python programming.
- Creating documents using Latex.
- Quantitative and qualitative large scale data analyst.

5.3   Articles in International Conference Proceedings

- **K. Oshinubi** and O.B. Longe, On Some Computational Methods for Solving an Ordinary differential Equation with Initial Condition, Proceedings of the 9th iSTEAMS Multidisciplinary Conference, University of Ghana, Legon, Accra Ghana**,** 75-80, (2017).
- **K. Oshinubi**, Adomian Decomposition solution to Bratu's equation, AIMS-UB
  International Conference on Mathematics and its application, University of Buea, Cameroon**,** 40-41, (2017).
- O. Afolabi & **K. Oshinubi**, Derivation of a Numerical Scheme to find any Root of any Real Number k using Newton Raphson Iterative Method. Proceedings of the 13th iSTEAMS Multidisciplinary Conference, University of Ghana, Legon, Accra, Ghana, 107-112, (2018).
- **K. Oshinubi**, E.J. Ikpeme, F. Daramola, A.O. Afolabi, O.V. Nwaocha and O.B Longe, Matrix Inversion Method Using C++ and Python, Proceedings of the 20th iSTEAMS Multidisciplinary Trans-Atlantic Conference, KEAN University, New Jersey, United States of America, (2019).

- **K. Oshinubi**, Vibration analysis of non-uniform Timonshenko beam resting on elastic foundation, Proceeding of 7th HLF Germany fellows' presentations, (2019).
- **K. Oshinubi**, S. Ighoyivwi, A. Adeyemi, M. Nkan and S. Sadiq, Computational Science with Euler Method Using C++, Javascript and Python, Proceedings of the 25th iSTEAMS Multidisciplinary Trans-Atlantic CAMP Conference, Universite Grenoble Alpes, France, (2020).
- J. Demongeot, **K. Oshinubi**, M. Rachdi and H. Seligmann, Geoclimatic, Demographic and Socio-economic determinants of the COVID-19 prevalence, EGU General Assembly Conference Abstracts, EGU21-7976, (2021).
- **K. Oshinubi**, M. Rachdi and J. Demongeot, The demographic and socioeconomic determinants of the Covid-19 outbreak for developing and developed countries, ICPMS, (2021).
- **K. Oshinubi**, J. Demongeot and M. Rachdi, The biphasic pattern of the virulence curve of the first and second wave of COVID-19, Conronavirus research conference proceedings, (2021).
- **K. Oshinubi**, M. Rachdi and J. Demongeot, Age dependent modeling and its application to COVID-19 outbreak, BAMC, UK (2022).
- **K. Oshinubi**, M. Rachdi and J. Demongeot, Statistical and mathematical modeling of COVID-19 pandemic, CIME summer school, Italy (2022).
- **K. Oshinubi**, M. Rachdi and J. Demongeot, The analysis of two bridges: mathematical and statistical modeling of viral infections dynamics, InChangE summer school, Germany (2022).

5.4   Paper(s) and Article(s) accepted/under review for publication/preprints
- A.A. Ayoade, **K. Oshinubi** and J.P. Olumuyiwa, Analysis of the effect of isolation on the transmission dynamics of COVID-19: a mathematical model, *J Egypt Math Soc,* (submitted).
- **K. Oshinubi,** G.O. Elumero, T. Omosebi, O.O. Komolafe, B.B. Afolabi, H. Odiwo and G. Abegunrin, Data Analysis of Orphanage Homes Fund Distribution in Nigeria, *J. Math. Comput. Sci*., (Accepted for publication).
- U.K. Nwajeri, S.E. Fadugba, E.O. Ohaeri, **K. Oshinubi**, R.R. Ogunrinde and R.B. Ogunrinde, Co-dynamic model of drug trafficking and money laundering coupled with fractional derivative, *International Journal of Applied Mathematics*, (submitted).

5.5   Publications in international journals (https://orcid.org/0000-0003-4598-8510)
- O. Babasola, **K. Oshinubi**, O.J. Peter, F.C. Onwuegbuche and F.A. Oguntolu, Time-Delayed Modeling of the COVID-19 Dynamics with a Convex Incidence Rate, Informatics in *Medicine Unlock*, 101124, (2022).
- M. Jelassi, **K. Oshinubi**, M. Rachdi and J. Demongeot, Epidemic dynamics on social interaction networks, *AIMS Bioengineering,* 10, 1-15, (2022).
- **K. Oshinubi**, I. Firas, M. Rachdi and J. Demongeot, Functional data analysis: transition from daily observation of COVID-19 prevalence in France to functional curves, *AIMS Mathematics,* 7, 5347-85, (2022).
- **K. Oshinubi**, A. Amakor, O.J. Peter, M. Rachdi and J. Demongeot, Approach to COVID-19 Time Series Data Using Deep Learning and Spectral Analysis Methods, *AIMS Bioengineering,* 8, 9-21, (2022).
- **K. Oshinubi**, S.S. Buhamra, N.M. Al-Kandari, J. Waku, M. Rachdi and J. Demongeot, Age Dependent Epidemic Modelling of COVID-19 Outbreak in Kuwait, France and Cameroon, *Healthcare,*10, 482, (2022).
- J. Waku, **K. Oshinubi** and J. Demongeot, Maximal reproduction number estimation and identification of transmission rate from the first inflection point of new infectious cases waves: COVID-19 outbreak example, *Mathematics and Computers in Simulation,* 198, 47-64, (2022).
- S.A. Alaka, **K. Oshinubi,** I. Fashakin and O. J. Akintande, Factors associated with psychological impact of coronavirus disease 2019 (COVID-19) outbreak in Nigeria: Regression-based approach, *J. Math. Comput. Sci*., 12, 119, (2022).
- **K. Oshinubi,** C. Fougère and J. Demongeot, A model for the lifespan loss due to a viral disease: example of the COVID-19 outbreak, *Infect. Dis. Rep.,* 14, 321-340, (2022).
- A. Glaria, R. Salas, S. Chabert, P. Roncagliolo, A. Arriola, G. Tapia, M. Salinas, H. Zepeda, C. Taramasco, **K. Oshinubi** and J. Demongeot, A stepforward to formalize tailored to the problem

specificity mathematical transforms: use of ELM and explorations with new bio-signals, *Front. Appl. Math. Stat.*,8, 855862, (2022).

- F.A. Oguntolu, D.W. Yavalah, C.F. Udom, O.J. Peter and **K. Oshinubi**, Mathematical Modelling for the Transmission Dynamics of Rift Valley Fever Virus with Human Host, *Jambura J. Biomath,* 3, 17-22*,* (2022).

- **K. Oshinubi**, M. Rachdi and J. Demongeot, Modelling of COVID-19 pandemic vis-à-vis the socio-economic factors, *Front. Appl. Math. Stat.,* 7, 786983, (2022).

- J. Demongeot, **K. Oshinubi**, M. Rachdi, L. Hobbad, M. Alahiane, S. Iggui, J. Gaudart and I. Ouassou, The application of ARIMA model to analyze COVID-19 incidence pattern in several countries, *J. Math. Comput. Sci*., 12*,* 10, (2022).

- O.J. Peter, S. Kumar, N. Kumari, F.A. Oguntolu, **K. Oshinubi** and R. Musa, Transmission dynamics of Monkeypos virus: a mathematical approach, *Model. Earth Syst. Environ.* 8, 3423-3434, (2022).

- O.J. Peter, I.A. Adesoye, O.E. Helen, F.A. Oguntolu, D.U. Mfon, **K. Oshinubi** and A. Sylvanus, Forecasting of COVID-19 Pandemic in Nigeria using real Statistical Data, *Commun. Math. Biol. Neurosci.*, Article ID 2, (2021).

- F.A. Oguntolu, G. Bolarin, O.J. Peter, A.I. Enagi and **K. Oshinubi**, Mathematical Model for the Control of Lymphatic Filariasis Transmission Dynamics, *Commun. Math. Biol. Neurosci.*, Article ID 17, (2021).

- O.J. Peter, I.O. Mohammed, O.E. Helen, F.A. Oguntolu, **K. Oshinubi**, A.I. Abdullahi, A.A. Tawakalt and J.O. Lawal, Direct and Indirect Transmission of Typhoid Fever Model with Optimal Control, *Result in Physics*, 27, 104463, (2021).

- A.I. Abioye, O.J. Peter, H.A. Ogunseye, F.A. Oguntolu, **K. Oshinubi**, A. I. Abdullahi and I. Khan, Mathematical model of COVID-19 in Nigeria with optimal control, *Result in Physics*, 28, 104598, (2021).

- O.J. Peter, A. Yusuf, **K. Oshinubi**, F.A. Oguntolu, J.O. Lawal, A.I. Abioye and T.A. Ayoola, Fractional order of Pneumococcal Pneumonia infection model with Caputo Fabrizio operator, *Result in Physics*, 29, 104581 (2021).

- **K. Oshinubi**, M. Rachdi and J. Demongeot, Analysis of daily reproduction rates of COVID-19 using current health expenditure as gross domestic product percentage (CHE/GDP) across countries, *Healthcare,* 9, 1247, (2021).

- J. Demongeot, **K. Oshinubi**, M. Rachdi, H. Seligmann, F. Thuderoz and J. Waku, Estimation of Daily Reproduction Rates in COVID-19 Outbreak, *Computation*, 9, 109, (2021).

- R.B. Ogunrinde, U.K. Nwajeri, S.E. Fadugba, R.R. Ogunrinde and **K. Oshinubi**, Dynamic Model of COVID-19 and Citizens Reaction using Fractional Derivative, *Alexandria Eng. J.*, 60, 2001-2012, (2021).

- T.A. Ayoola, O.E. Helen, O.J. Peter, F.A. Oguntolu, **K. Oshinubi** and M.L. Olaosebikan, Modelling and optimal control analysis of typhoid fever, *J. Math. Comput. Sci*., 11, 6666-6682, (2021).

- **K. Oshinubi**, F. Al-Awadhi, M. Rachdi and J. Demongeot, Data Analysis and Forecasting of COVID-19 Pandemic in Kuwait Based on Daily Observation and Basic Reproduction Number Dynamics, *Kuwait J. Sci.*, Special Issue, 1-30, (2021).

- E.O. Titiloye, J.A. Gbadeyan and **K. Oshinubi**, Free Vibration of uniform shear beam on Winkler Foundation, *Journal of Digital Innovations & Contemp. Res. In Sc. and Engineering*, 4, 212-228, (2017).

- **K. Oshinubi** and R.B. Ogunrinde, An Adomian Decomposition Method for Autonomous and Non-Autonomous Ordinary Differential Equations, *Asian Journal of Mathematics and Computer Research*, 19, 65-74, (2017).

- **K. Oshinubi** and E.O. Titiloye, Application of ADM and DTM on the Free Vibration of Uniform Shear Beam with free ends, *Advances in Multidisciplinary & Scientific Research*, 3, 1-12, (2017).

- R.B. Ogunrinde and **K. Oshinubi**, A Computational Approach to Logistic Model using Adomian Decomposition Method, *Computing, Information Systems, Development Informatics & Research Allied Journal*, 8, 45-52, (2017).

5.6 International conferences

- 9th iSTEAMS Multidisciplinary Conference, University of Ghana, Legon, Accra Ghana, October 2017.
- 1st AIMS-UB International Conference on Mathematics and its application, held at University of Buea, Cameroon, December 2017.
- 13th iSTEAMS Multidisciplinary Conference, University of Ghana, Legon, Accra, Ghana, October 2018.
- Operation Research Techniques and Applications school for Africa, Institute of Mathematics and Physics, Dangbo, Republic of Benin, November 2018.
- 1st Data Science School, Institute of Mathematics and Physics, Dangbo, Republic of Benin, December 2018.
- 7th Heidelberg Laureate forum in Germany, September 2019.
- 20th iSTEAMS Multidisciplinary Trans-Atlantic Conference, KEAN University, New Jersey, United States of America, October 2019.
- SEME- Maths Study week with fundamentals of computing at Aix Marseille Universite, December 2019.
- 21st Louis Antoine days at Université de Rennes, France, November 2019.
- 25th iSTEAMS Multidisciplinary Trans-Atlantic CAMP conference, Universite Grenoble Alpes, France, July 2020.
- Recent Advancements in Mathematical sciences and its applications conference organized by Department of Mathemtics, Chakdaha College, Chakdaha, Nadia, West Bengal, India, August 2020.
- CBH Summer school: Shape the future, Université Grenoble Alpes France, June 2021.
- EGU General assembly conference. Held online. April 2021.
- 4th International conference on Physics, Mathematics and statistics, Kunming, China (held online), May 2021.
- 1st experts meet on Coronavirus and Research conference, Global Episteme, New York USA (held online), March 2021.
- Black Heroes of Mathematics Conference, United Kingdom (held online), October 2021.
- 43rd annual international conference of the IEEE engineering in medicine and biology society, Mexico (held online), November 2021.
- Study group mathematics with industry, University of Twente, January 2022.
- 63rd British Applied Mathematics Colloquium, Loughborough University, UK, April 2022.
- ICM2022 Down Under at University of Sydney, Australia, July 2022.
- Cambridge ELLIS machine learning summer school, Cambridge University, UK, July 2022.
- CIME summer school, Grand Hotel San Michele – Cetraro (Cosenza) Italy, September 2022.
- InChangE summer school, Munster University, Germany September 2022.

6 Awards, Grants and Fellowships

6.1 International Affiliation(s)
- Fellow- African Scientific Institute, USA.
- Heidelberg Laureate Forum Alumnus, Germany.
- RTF-DCS Fellow, India.

6.2 Membership of Professional Association/bodies:
- Vice chair, board for student section, Ecological Society of America.
- Member of Society Informatique de France.
- Member of European Mathematical Society.
- Member of Institute of Electrical and Electronics Engineers.
- Member of IEEE Engineering in Medicine and Biology Society.
- Member of Ecological Forecasting Initiative.
- Member of Institute of Applied Mathematics.
- Member of Sociéte Mathématique de France

- Member of Society of Industrial and Applied Mathematics
- Member of Australian Mathematical Society
- Member of Royal Statistical Society.
- Member of Institute of Mathematical Statistics.

6.3   Grants   (Total = $200,345)
- Conference grant to AIMS-UB International Conference on Mathematics and its application, University of Buea, Cameroon, December 2017.
- Travel and Conference grant to Operation Research Techniques and Applications school for Africa, Institute of Mathematics and Physics, Dangbo, Republic of Benin, November 2018.
- Travel and Conference grant to 1st Data Science School, Institute of Mathematics and Physics, Dangbo, Republic of Benin, December 2018.
- Petroleum Technology Development fund grant for PhD in France, June 2019.
- Travel Grant to 7th Heidelberg Laureate forum in Germany, September 2019.
- Travel, fellowship grant and Research Training Fellowship India 2020.
- IMU grant - Travel and Conference grant to International Mathematical union centennial in Strasbourg, September 2021.
- Kovalevskaya grant - Travel and Conference grant to ICM2022 Down Under at University of Sydney, Australia, July 2022.
- IDEX grant – Visiting researcher and scholar to Oxford University, UK, 2022.
- ESA grant - Travel and Conference grant to ESA/CSEE annual meeting and conference at Montreal, Canada, August 2022.
- Travel Grant to Stochastic reaction networks summer school in Italy, July 2022.
- Travel grant to 12th Montreal industrial problem-solving workshop, Canada, 2022.
- Travel grant to Cambridge ELLIS machine learning summer school, UK, 2022.
- CIME grant - full grant to CIME school on mathematical modeling for epidemiology: analysis, simulation and forecasting, Cetraro, Italy, 2022.
- Conference Grant to workshop on mathematical ecology at Queen's University, Kingston, Ontario, Canada.
- InchangeE grant – Visiting researcher and scholar to Bielefeld University, Germany, 2022.
- Postdoctoral research grant at Northern Arizona University, USA, 2023.

7   Responsibilities

7.1   Teaching Activities

My teaching activities since 2013

At Bells University of Technology, Otta Nigeria:
- Taking of tutorial classes [AMS101(General Mathematics I), MAT001(Mathematics for predegree), AMS102 (General Mathematics II), EEE201(Engineering Mathematics I), EEE202 (Engineering Mathematics II), AMS105 (Mathematics for Management Sciences I), AMS106 (Mathematics for Management Sciences II), AMS201(Further Calculus)].
  At Caleb University, Lagos Nigeria:

- Teaching Mat313 (Numerical Analysis II), Mat315 (Vector and Tensor Analysis,   Mat205 (Abstract Algebra), Stat205 (Probability I), Stat 208 (Statistics for non-majors), Mat 207 (Real Analysis I), Mat 104 (Vector), Mat 210 (Real Analysis II) and GNS104 (Basic Computer Applications). Supervised internships and final year BSc projects.
  At Caleb Business School, Lagos Nigeria:
- Teaching Mat 001(Pure Mathematics), Mat 004 (Statistics), Mat313 (Numerical Analysis II), Mat 101/Eco105/Sms101(General Mathematics I),Mat 210 (Real Analysis II), Mat302 (Ring theory), MBA812 (ICT Management), Mat204 (Numerical Analysis I), CSS 443 (Traffic/Road Safety and

Security and GNS104 (Basic Computer Applications). Supervised internships and final year BSc projects.

At Lagos State University, Lagos Nigeria:

- Teaching Mat002 (Calculus) and Mat003 (Mechanics).

At Université Grenoble Alpes, France:

- Researcher and Data Analyst
- Developing and Applying Mathematical and Statistical models

7.2   Administration

Held some positions in all universities I have worked but these are key responsibilities:

- Member Academic Board, Lagos State University Foundation Programme. October, 2016-August 2019.
- Ambassador- Grenoble Innovation for Advanced New Technologies, Grenoble France, 2020-2021.
- IEEEXTREME 15.0 Ambassador, France section, 2021.
- Mentoring Master 2 student at CBH graduate school, Université Grenoble Alpes, France, 2021-2022.
- General Coordinator- Caleb Business School, Lagos Undergraduate Programmes. August 2017-November 2018.
- Member Curriculum Review of the Department of Physical Sciences- Mathematics unit which proposed the Department of Mathematics and Statistics with Options in Mathematics and Statistics. Bells University of Technology, Otta Nigeria. January 2014-May 2014.

7.3   Academic Journal Peer Review Activities (https://publons.com/dashboard/records/review/)

1. AIMS Bioengineering – Guest Editor
2. Frontiers in Public Health – Reviewer and research topic coordinator
3. Frontiers in Medicine – Reviewer and research topic coordinator
4. BMC Infectious Disease – Reviewer
5. BMC Public Health – Reviewer
6. Data in Brief – Reviewer
7. Mathematics and Computational Sciences – Reviewer
8. Journal of Emerging Diseases and Virology – Reviewer
9. Asian Research Journal of Mathematics – Reviewer
10. African Journal of Medical and Health Science – Reviewer
11. Informatics in Medicine Unlocked – Reviewer
12. Caspian Journal of Mathematical Sciences – Reviewer
13. Scientific African – Reviewer
14. Scientific Reports – Reviewer
15. Phenomics – Reviewer
16. Nonlinear Dynamics – Reviewer
17. Infection Ecology and Epidemiology – Reviewer
18. PLOS ONE – Reviewer
19. Mathematical Modeling and Control – Reviewer
20. BMC Medical Research Methodology – Reviewer
21. Theoretical Ecology – Reviewer
22. Fractal and Fractional – Reviewer

In Grenoble, October 28, 2022

Kayode Oshinubi, PhD