SARAH GAKII

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TECHNICAL SKILLS

- Computational & Statistical Modeling
- Data Cleaning, Transformation & Insights
- Data Analytics & Visualization (Advanced Excel, SQL, Power BI, Python)
- Business Analytics & Reporting (Dashboards, KPIs, Forecasting)
- Data Interpretation & Trend Analysis
- Mathematical & Scientific Computing (MATLAB)
- Individual Tax Preparation (Form 1040, Filing Status, Dependents)
- Taxable Income Determination & Compliance
- Machine Learning and AI
- Hypothesis Testing and Regression Analysis
- Research, Technical Writing & Presentation Skills
- Teaching and Mentorship

EDUCATION

M.A. in Applied Mathematics and Scientific Computation
Bowling Green State University (BGSU) | Bowling Green, OH
Graduated: Aug. 2025 | Cumulative GPA: 3.91

M.S. in Mathematical Sciences
Stellenbosch University (SU) | Cape Town, South Africa
African Institute for Mathematical Sciences (AIMS) structured master's program
Graduated: June 2023 | *Cum Laude*

B.S. in Mathematics (Pure and Applied Mathematics)
Technical University of Kenya (TU-K) | Nairobi, Kenya
Graduated: July 2021 | Cumulative GPA: 3.73

WORK EXPERIENCE

Mathematics / Data Analysis Expert (AI Training)
Mercor | United States, Remote | March 2025 - Present
- Design, validate, and optimize mathematical and statistical datasets for AI training, improving model reasoning accuracy.
- Collaborate with a top-tier AI company to deliver high-quality, production-ready training data for advanced AI applications.

Graduate Teaching Assistant (Mathematics)
Bowling Green State University (BGSU) | Bowling Green, Ohio | Sept. 2023 – Aug. 2025
- Instructed Precalculus and College Algebra, integrating applied analytics and problem-solving into coursework.
- Conducted statistical analysis of assessment data to evaluate student learning outcomes and trends.
- Supported faculty research in computational modeling and scientific computing.

Mathematics Reasoning Annotator (AI Training)
Telus International | United States, Remote | Jan.– Feb. 2025
- Designed and reviewed high-level mathematical reasoning prompts to optimize AI model training.
- Conducted annotation and error analysis, improving model accuracy and reliability for real-world applications.

Production Operator
Grammer Americas | Bowling Green, Ohio | April - August 2024
- Monitored automated blow-molding systems producing Tier-1 automotive components.
- Applied quality control metrics to reduce scrap rates and ensure compliance with strict industry standards.
- Collaborated with maintenance teams to resolve equipment issues, minimizing downtime and sustaining production flow.

Graduate Assistant (Mathematics)
The Technical University of Kenya (TU-K) | Nairobi, Kenya | July 2023 - July 2024
- Led tutorial sessions in Statistics.
- Developed and evaluated instructional materials.

Graduate Teaching Assistant (Mathematics)
Dedan Kimathi University of Technology (DeKUT) | Nyeri, Kenya | Nov. 2021 – Sept. 2022
- Delivered tutorials and lectures in Calculus I & II, Discrete Mathematics.
- Assessed student progress through grading, feedback, and performance analysis.

Junior Data Analyst
Lumira Insights Group | Nairobi, Kenya | Apr. – Dec. 2020
- Built forecasting models that improved inventory and staffing planning accuracy.
- Cleaned, transformed, and visualized operational data using Excel and PivotTables.
- Designed interactive dashboards to help client organizations monitor engagement metrics and resource allocation.

Data & Records Management
The National Social Security Fund (NSSF) | Naivasha, Kenya | May - August 2019
- Processed and validated account registrations and identity records with high accuracy.
- Improved compliance and data reliability through systematic documentation and data entry.

NOTABLE HONORS/AWARDS

- James Robert and Gretchen Overman Graduate Scholarship Award – BGSU, 2024
- Paul G Allen Family Foundation Scholarship Award – AIMS South Africa, 2023

PROJECTS AND RESEARCH EXPERIENCE

A Newton-Finite Difference Method for Elliptic and Parabolic Problems with Nonlinear Interface Jump Conditions | 2025
- Developed novel numerical algorithms; applied computational modeling to nonlinear boundary problems.
  Published Thesis

Excel Financial Analysis for Business Insights | 2025
- Built KPI-driven dashboards with PivotTables, charts, and financial metrics for multidimensional datasets.
  GitHub Project

A Mathematical Model for Crime with Cooperative Policing | 2023
- Co-authored a mathematical model on cooperative policing; presented at AMS School 2023.

Modeling the Impact of Human Behavior on COVID-19 Vaccine Uptake | 2023
- Built a Python simulation model integrating game theory + epidemiology to predict vaccine adoption trends.
  Research

A Stochastic Version of a Competing Species Model | 2022
- Conducted simulations on species coexistence using statistical and stochastic simulations; presented at Mfano Africa – Oxford Mentorship Programme.

WORKSHOP AND TRAINING

Tax Preparation, Intuit Academy, Online | 2025
- Currently training in U.S. federal individual tax return preparation, focusing on Form 1040, filing statuses, income rules, and credits/deductions.

Active Learning Certificate Program, BGSU, Ohio | 2025
- Designed inclusive, active learning course module.

Excel Advanced Analytics Workshop, BGSU, Ohio | 2025
- Advanced data visualization and analysis techniques.

African Mathematical Modeling Union (AMU) school 2023, Nairobi, Kenya | 2023
- Presented insights from a collaborative crime dynamics mathematical model.

Africa Scientifique workshop, AIMS South Africa | 2023
- Designed and presented a community outreach proposal on financial literacy.

Mathematics in Industry Study Group (MISG), South Africa | 2023
- Modeled and prresented energy dynamics of green roofs with PDEs.

Mfano Africa - Oxford Mathematics Virtual Mentorship Programme | 2022
- Presented stochastic ODE model on red vs. grey squirrel dynamics.