MARK NGOTONIE

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Professional Summary:

I am a transportation and infrastructure professional with over six years of experience in planning, procurement, design, construction, management, and maintenance. Passionate about innovation, sustainability, and data-driven decision-making, I strive to apply my expertise to innovative and sustainable mobility solutions that enhance urban and regional transportation systems. Eager to contribute to impactful projects, I seek opportunities to expand my knowledge, collaborate with industry leaders, and drive meaningful change in the field.

Education:

MSc. Transportation Engineering
South Carolina State University (SCSU) August 2024 – Present

- **Courses:** Transportation Statistics and Research, Systems Analysis in Transportation, Urban Transportation Policy Development, International Logistics, and Transportation Economics and Finance.

BSc. Civil Engineering 3.38 GPA
Ardhi University (ARU) September 2013 – December 2017

- **Final Year Dissertation:** Performance Evaluation of Kigamboni Ferry Operations: Application of Queueing Theory to Improve Total Travel Time.

Industry Experience:

Graduate Research Assistant: **South Carolina, U.S.A**
South Carolina State University August 2024 – Present

- Created a Python-based machine learning framework for lane detection in construction zones, researching sustainable urban mobility solutions and climate-resilient transportation systems, delivering data-driven recommendations aligned with global development goals.
- Analysed transportation efficiency datasets using Python and R to evaluate economic and environmental impacts, resulting in actionable policy insights for sustainable urban development.
- Authored academic papers on regional connectivity and sustainable transportation solutions, collaborating with stakeholders to propose methods for reducing urban congestion and improving accessibility while minimising environmental impact.
- Presented findings at the Transportation Research Board (TRB) 2025 conference.

Design Engineer: **Arusha, Tanzania**
STECOL Corporation August 2022 – March 2023

- Redesigned an 18-kilometer road upgrade to bitumen standard, improving geometric alignments and structural features, resulting in a 10% increase in design precision.
- Optimised road geometry and structural designs by integrating climate resilience considerations into specifications, enhancing infrastructure sustainability against extreme weather events.
- Conducted cost-benefit analyses for sustainable design alternatives, balancing economic efficiency with environmental impact.
- Led technical reviews of 20+ site surveys, utilising AutoCAD, Civil 3D, and MS Office to validate engineering specifications and ensure full compliance with industry standards.
- Collaborated with engineering teams to address design challenges, meet project deadlines, and maintain stringent safety protocols.

Inspector of Works: **Arusha, Tanzania**
TANROADS Engineering Consulting Unit (TECU) March 2019 – March 2022

- Supervised the construction of over 20 kilometers of road and 60+ structures, ensuring compliance with quality standards, technical specifications, and climate resilience.
- Reviewed and validated over $15 million in interim payment certificates (IPCs), implementing systematic review procedures that enhanced financial accuracy by 25% and reduced payment processing time by two weeks.
- Ensured the prompt approval of over 60 design drawings and supported efficient contract administration by addressing contractor claims and enquiries.

Civil Engineer: **Arusha, Tanzania**
Tanzania National Roads Agency (TANROADS) February 2018 – March 2019

- Managed 4+ labour-based and roadwork contracts to enhance sustainable highway designs, emphasising stormwater management, aesthetics, grading, and erosion control.
- Developed comprehensive project monitoring frameworks integrating environmental and social impact assessments with traditional engineering metrics.
- Optimised bidding assessments for 15+ infrastructure projects, leading to improved contractor selection and financing.
- Prepared technical and financial proposals for 3+ road maintenance projects, securing essential funding for the 2018/2019 fiscal year.

Publications:

1. Kutela B., Ngeni F., Novat N., Shita H., **Ngotonie M.**, Mwekh'iga R., Langa N., and Das S., "Understanding Socio-Demographic Factors Associated with Shared-Use Paths (SUPs) Utilisation," 2024.

Transportation Research Board (TRB) Presentations:

1. **Ngotonie M.**, Kutela B., Ngeni F., Das S., Lyimo S., "Understanding Sun Glare Crashes from Driver's Perspective: A Matched Case-Control Exploratory Study," 2025.
2. Kutela B., Shita H., Novat N., **Ngotonie M.**, Kinero A., Langa N., "Who Is Returning to Normal Ridership?: A Socio-Demographic Study on Pre- and Post-COVID-19 Public Transit Ridership in San Francisco," 2025.

Software:

- Python (transportation data analysis, ML), R (statistical analysis), Civil 3D, AutoCAD, MS Project

Language Skills:

- Swahili Fluent
- English Fluent

Professional Involvement:

- **Student Member** – American Society of Civil Engineers (ASCE) September 2024
- **Student Member** – Institute of Transportation Engineers (ITE) September 2024
- **Professional Engineer (PE8290)** - Engineers Registration Board Tanzania (ERB) March 2023
- **Member (MIET 2119)** - Institution of Engineers Tanzania (IET) February 2023