

## DANIEL EMAASIT

Doctoral Student & Graduate Research Assistant  
Transportation Research Center, University of Nevada Las Vegas – Department of Civil and  
Environmental Engineering and Construction  
2800 South Eastern Avenue #101  
Las Vegas, Nevada, US 89109  
Phone: 1-615-649-2489

emaasit@unlv.nevada.edu

daniel.emaasit@gmail.com

www.danielemaasit.com

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### **EDUCATION**

#### **Doctor of Philosophy in Civil and Transportation Engineering** (Expected in August, 2016)

University of Nevada, Las Vegas, NV, USA. (2013 - Present)

Dissertation Topic: *A Route Segmentation and Statistical Learning Approach for Integration of Spatially Referenced Transportation Data.*

#### **Masters of Engineering in Civil and Transportation Engineering** (Aug, 2013). GPA=3.9/4.0

Tennessee State University, Nashville, TN, USA. (2011 - 2013)

Thesis Topic: *Framework to Identify Factors Associated with High Pedestrian and Bicycle Crash Locations Using Geographic Information System and Statistical Analysis.*

#### **Bachelor of Science (Honors) in Civil & Transportation Engineering** (Nov, 2010). GPA=4.0/5.0

University of Dar Es Salaam, Tanzania. (2006 - 2010)

Final Year Project: *Laboratory study on the suitability of Cement Kiln Dust and Non-Conforming Clinker for upgrading of the Engineering properties of laterite soils.*

### **RESEARCH INTERESTS**

- Highway Safety Analysis
- GIS Applications in Transportation
- Application of Statistics, Data Mining and Machine Learning in Transportation
- Operations Research in Transportation Engineering
- Traffic Operations and Analysis, Simulation, Bicycle, and Pedestrian Studies
- Public /Transit Transportation
- Traffic Demand Forecasting and Modeling
- Econometric Methods for Transportation Data Analysis

### **PUBLICATIONS**

1. Paz, A., **Emaasit, D.**, Branchini, M., Batoumi, A., Fouche, A., and H. De la Fuente. (2015). "Management of Large GIS Data for Utility Infrastructure". *The Scientific World Journal*, Under Review.
2. **Emaasit, D.**, Chimba, D., Allen, S., Hurst, B., Nelson, M. (2014). "Factors affecting Median Cable Barrier Crash Frequency: New Insights". *Journal of Transportation Safety and Security*, Vol. 6 No. 1, 2014, pp. 62-77. doi:10.1080/19439962.2013.812168.

3. Chimba, D., **D. Emaasit** and B. Kutela, (2012). "Integrating Origin-Destination Survey and Stochastic User Equilibrium: A Case Study for Route Relocation," *Journal of Transportation Technologies*, Vol. 2 No. 4, 2012, pp. 297-304. doi: 10.4236/jtts.2012.24032.
4. Chimba, D., **D. Emaasit** and B. Kutela (2012). "Likelihood Parameterization of Bicycle Crash Injury Severities," *Journal of Transportation Technologies*, Vol. 2 No. 3, 2012, pp. 213-219. doi: 10.4236/jtts.2012.23023.

## **CONFERENCE PROCEEDINGS**

1. **Emaasit, D.**, and A. Paz. (2015). "Workflow for Managing GIS Utility Information". Presented at the Utility Committee Meeting of the *Transportation Research Board*, 94th Annual Meeting, (TRB), Washington, D.C., January 13<sup>th</sup>, 2015.
2. **Emaasit, D.**, and A. Paz. (2014). "Development of Tools for the Management of GIS Utility Infrastructure". Presented at the 23rd *Annual Fall Transportation Conference*. Institute of Transportation Engineers (ITE), Las Vegas, NV, October 10<sup>th</sup>, 2014. [**Best Paper & Presentation Award**]
3. **Emaasit, D.**, Chimba, D., Cherry, C., Pannell, Z. (2014). "Patterning Demographic and Socioeconomic Characteristics Affecting Pedestrian and Bicycle Crash Frequency". Accepted for presentation at the *Transportation Research Board* 93<sup>rd</sup> Annual Meeting, (TRB), Washington, D.C., January 14<sup>th</sup>, 2014.
4. **Emaasit, D.**, and D. Chimba. (2013). "Methodology to Identify Factors Associated with Pedestrian High-Crash Clusters Using GIS-Based Local Spatial Autocorrelation". Presented at the 35th *Annual Tennessee State University-Wide Research Symposium* Nashville, April 5<sup>th</sup>, 2013. [**Best Poster Presentation Award**].
5. **Emaasit, D.**, Chimba, D., Cherry, C., Kutela, B., Wilson, J. (2013). "Methodology to Identify Factors Associated with Pedestrian High-Crash Clusters Using GIS-Based Local Spatial Autocorrelation". Accepted for presentation at the *Transportation Research Board* 92<sup>nd</sup> Annual Meeting, (TRB), Washington, D.C., January 15<sup>th</sup>, 2013.
6. Chimba, D., **Emaasit, D.**, Allen, S., Hurst, B., Nelson, M. (2013). "Safety-Effectiveness Evaluation of Cable Rail Systems in Tennessee". Accepted for presentation at the *Transportation Research Board* 92<sup>nd</sup> Annual Meeting, (TRB), Washington, D.C., January 16<sup>th</sup>, 2013.
7. Chimba, D., Kutela, B., **Emaasit, D.**, Ogletree, G., Horne, F., Hallavant, R. (2013). "Impact of Abandoned and Disabled Vehicles on Freeway Incident Durations". Accepted for presentation at the *Transportation Research Board* 92<sup>nd</sup> Annual Meeting, (TRB), Washington, D.C., January 14<sup>th</sup>, 2013.
8. Chimba, D., and **Emaasit, D.** (2012). "Safety-Effectiveness Evaluation of Cable Rail Systems in Tennessee". Presented at the 34<sup>th</sup> Annual Tennessee State University-Wide Research Symposium, Nashville, March 26<sup>th</sup>, 2012.
9. Bujulu, P. M. S. and **Emaasit, D.** (2010) "Suitability of Cement Kiln Dust and Non-Conforming Clinker for Upgrading the Engineering Properties of Laterite Soils", 3<sup>rd</sup> Seminar on Infrastructure Technologies for Sustainable Development: JSPSAA Science Platform Program, 17th September, 2010, Kyoto, Japan.

## **Other Conferences attended**

1. The 91<sup>st</sup> Annual Meeting of the Transportation Research Board (TRB), Washington, D.C., January 22-26, 2012.
2. Annual Meeting of the Intelligent Transportation Society of Tennessee (ITS), Memphis, Tennessee, September 28-30, 2011.
3. Regional Conference on Innovations in Road Financing and Management organized by the Tanzania Roads Fund Board (TRFB), Arusha, Tanzania, August 26-27, 2010.

## **CAREER EXPERIENCE**

### **Graduate Research Assistant, University of Nevada-Las Vegas (August, 2013 – Present)**

Project 1: *Development of a GIS Data Layer for Utilities in the ROW of NDOT Roads.*

Sponsor: Nevada Department of Transportation (NDOT)

Tasks;

- Literature review and creation of a data library and an inventory of GIS utility data
- Collection of sample utility data using surveying devices like Trimble GPS units
- Processing field survey data into ESRI GIS data formats

Project 2: *Business Intelligence for Nevada Department of Transportation.*

Sponsor: Nevada Department of Transportation (NDOT)

Tasks;

- Literature review of Bridge Management Systems (BMS)
- Bridge data collection, understanding and preparation
- Analysis of bridge data for anomalies and inconsistencies
- Applying route segmentation and statistical learning techniques for data integration

### **Graduate Research and Teaching Assistant, Tennessee State University (August, 2011 – July, 2013)**

Project 1: *Safety Effectiveness Evaluation of Median Cable Barriers in Tennessee.*

Sponsor: Tennessee Department of Transportation (TDOT)

Tasks;

- Collected data including crash data, geometric data of road segments with median cable barriers, properties of median cables used in Tennessee.
- Reviewed hard copy crash reports to identify median related crashes.
- Developed descriptive statistics of before and after performance of cable systems.
- Conducted Empirical Bayes analysis of the before and after performance of the cable systems.

Project 2: *Statewide Pedestrian and Bicycle Safety Analysis and Investment Policy.*

Sponsor: Tennessee Department of Transportation (TDOT)

Collaboration: With University of Tennessee Knoxville

Tasks;

- Collected data including pedestrian and bicyclist crash data, geospatial data of census tracts in Tennessee, socio-economic and demographic data of Tennessee.
- Geocoded crash data and identified high crash location using GIS spatial statistics.
- Performed descriptive statistical analysis of crash data.
- Applied statistical models such as Multinomial Logit and Negative Binomial models to perform Injury Severity and Frequency analysis of the crash data.

#### Teaching Assistant/Undergraduate Courses Taught

- CVEN 3131 Soil Mechanics Lab
- CVEN 3200 Transportation Engineering
- CVEN 4090 Traffic Engineering
- CVEN 4320 Highway Engineering

#### **Research Assistant, University of Dar Es Salaam (August, 2010 – June, 2011)**

Project: *Geotechnical Properties of Two-Stage Stabilized Expansive Soils with Lime and Cement.*

Supervisor: Dr. P.M.S. Bujulu

Tasks;

- Performed soil tests such as Atterberg limits, sieve analysis, Modified Proctor test, Unconfined Compressive Strength.

#### **Highway Engineering Intern, SMEC International Pty, (Australian Consulting firm, Tanzania office) (July, 2009 – October, 2009)**

Project: *Preparation of preliminary and detailed Road engineering designs, cost estimates, bidding documents, and environmental and social impact assessments for the investment sub-projects for Dodoma municipality under the Tanzania strategic cities project.*

Tasks;

- Conducted roadway inventory of features within the Right of Way
- Conducted geometric designs of roads using AutoCAD Civil 3D 2010.
- Prepared preliminary cost estimates for the roads.

#### **Civil Engineering Materials Intern, Central Materials Laboratory (CML) Ministry of Works and Transport, Uganda (July 2008 – October 2008).**

Tasks: *Tested construction materials from contractors including tests like Atterberg limits, Proctor test, and sieve analysis.*

#### **Water Resources Engineering Intern, M & E Associates Ltd Consulting Engineers, Uganda (July, 2007 – October, 2007)**

Project: *Rehabilitation and construction of water and sanitation facilities in Soroti, Sironko and Kaberamaido districts in Uganda.*

#### **COMPUTER SKILLS**

1. RDBMS: MS SQL Server, Oracle DB, & MySQL
2. NoSQL: MongoDB
3. Statistics: R, STATA & SPSS.
4. Programming: Java, Scala & Visual Basic
5. Version Control: Git & Github
6. Business Intelligence: Teradata, RapidMiner, & Tableau
7. Planning: ESRI ArcGIS & MS Project.
8. Highway Design: Micro Station & AutoCAD Civil 3D.
9. Traffic Analysis: HCS & Synchro.
10. Big Data: h2o, Apache Spark, Amazon EMR, Databricks Cloud
11. Microsoft Office: Word, Excel, PowerPoint & Access.

## **AWARDS AND SCHOLARSHIPS**

1. Best student paper and oral presentation award at the 2014 Fall Transportation Conference. Organized by Institute of Transportation Engineers (ITE)-Nevada Chapter, Las Vegas, October 9-10, 2014. (Award amount: \$500).
2. UNLV Access Grant NN, University of Nevada Las Vegas (2014 & 2015). (Award amount: \$2,000).
3. Graduate Research Assistantship, University of Nevada-Las Vegas (2013-2016). (Award amount: Full tuition and Stipend).
4. Certificate for Best Graduate Poster Presentation in the Category of Engineering, 35<sup>th</sup> Annual Tennessee State University-Wide Research Symposium, Nashville, April 1-5, 2013. (Award amount: \$500)
5. Certificate for Excellent Academic Performance from the Golden Key International Honor Society, Tennessee State University. (Awarded on December 6, 2012)
6. Graduate Research and Teaching Assistantship, Tennessee State University (2011-2013). (Award Amount: Full tuition and Stipend).
7. Transportation and Geotechnical Engineering Department Prize for being the Best Final year student in Civil and Transportation Engineering, University of Dar Es salaam. (Awarded in November, 2010). (Award amount: Tshs. 50,000).
8. Highway and Transportation Engineering Prize for being the Best 4<sup>th</sup> year student in Civil and Transportation Engineering, University of Dar Es salaam. (Awarded in November, 2010). (Award amount: Tshs. 50,000).
9. Certificate for Excellent Performance for being the Best First year student in Civil and Transportation Engineering during the 2006/2007 Academic year, University of Dar Es salaam (Awarded in November 2007). (Award amount: Tshs. 50,000).
10. Exchange Student scholarship from the Inter-University Council for East Africa to pursue B.Sc. in Civil Engineering at the University of Dar Es salaam (2006-2010). (Award amount: Full tuition and Stipend).

## **MEMBERSHIP IN PROFESSIONAL SOCIETIES**

1. Nevada Geographic Information Society (NGIS). (2015-Present)
2. American Statistical Association (ASA). (2014-Present)
3. Professional Association for SQL Server (2014-Present)
4. Intelligent Transportation Society of America (ITS). (2014-Present)
5. Golden Key International Honor Society (2012-Present)
6. Institute of Transportation Engineers (ITE). (2011 – Present)
7. American Society of Civil Engineers (ASCE). (2011 – Present)
8. Institution of Engineers in Tanzania (IET). (2007 – Present)

## **VOLUNTEER EXPERIENCE**

1. Reviewer, Journal of Transportation Research Board (2014-Present)
2. Reviewer, Journal of Traffic Injury Prevention (2014-Present)
3. Organizer, Las Vegas R Users Group (2014-Present)
4. Organizer, Data Science Las Vegas (2014-Present)
5. Secretary & Founding Member, Institute of Transportation Engineers (ITE)-Tennessee State University Chapter (2011 – 2013)
6. General Secretary, Rotaract Club of Kwanza, University of Dar Es Salaam (2008 – 2009)

## **REFEREES**

1. Dr. Alexander Paz, Ph.D., P.E.  
Associate Professor,  
Director, Transportation Research Center,  
University of Nevada, Las Vegas,  
Howard R. Hughes College of Engineering,  
Civil and Environmental Engineering,  
4505 Maryland Parkway, PO Box 454015,  
Las Vegas, NV, USA, 89154-4015,  
Phone: (702) 895-0571,  
Email: [apaz@unlv.edu](mailto:apaz@unlv.edu)
  
2. Dr. Deo Chimba, Ph.D., P.E., PTOE.  
Associate Professor,  
Department of Civil and Architectural Engineering,  
College of Engineering,  
Tennessee State University,  
3500 John A Merritt Blvd,  
Nashville, TN, USA, 37209,  
Office: 108 B Torrence Hall  
Phone: (615) 963-5430,  
Email: [dchimba@tnstate.edu](mailto:dchimba@tnstate.edu)