

BENJAMIN OSAFO AGYARE

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EDUCATION

AUG 2021 - 2026 (EXPECTED)	PhD in STATISTICS, University of Michigan, Ann Arbor Research focus: Machine Learning, High-Dimensional Statistics, Robust Statistics, Non-Parametric Regression Advisor: Prof. Kerby SHEDDEN
AUG 2019 - JULY 2021	MS in STATISTICS & DATA SCIENCE, University of Nevada, Reno Recipient of Full Scholarship from the Department of Mathematics and Statistics.
SEPT 2013 - MAY 2017	BS in ACTUARIAL SCIENCE, Kwame Nkrumah University of Science and Tech Honors Thesis: A Survival Analysis on the Surrender of Life Insurance Policies in Ghana Advisor: Prof. Gabriel ASARE-OKYERE

WORK EXPERIENCE

MAY 2020 - AUG 2020	Predictive Modeling Intern, EMPLOYERS Insurance Group <ul style="list-style-type: none">- Conducted Territorial Analysis on claim frequencies by employing Spatially Constrained Clustering Algorithms and Generalized Additive Models, leading to the re-clustering of rating territories for enhanced pricing models- Developed Loss Development Models utilizing Elastic-Net Poisson GLM, significantly enhancing the predictive accuracy of future losses and optimizing reserve setting for the company- Constructed Pure Premium models through GLMs and Zero-Inflated Models for accurate prediction of future loss costs
JAN 2020 - MAY 2020	Graduate Researcher, University of Nevada, Reno <ul style="list-style-type: none">- Applied Bayesian frameworks to analyze federal election results for each state from 1992 to 2018, employing a novel Bayesian multilevel linear model for efficient simultaneous analysis of all states' data

TEACHING AND MENTORSHIP

Graduate Instructor:	Develop instructional content, conduct labs, and evaluate assessments for 1000+ students across 10+ graduate and undergraduate classes, including in Computational Statistics, Regression, GLMs & Mixed Models, and Semi-Parametric Models
Research Advisor:	Co-supervise two undergraduate students, focusing on robust matrix factorization techniques for analyzing biomedical data

SELECTED RESEARCH AND PROJECTS

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- **A Simulation Study on High Dimensional Shrinkage Feature Selection Using MCMC Methods, *U of M*** *April 2023*
 - Conducted a simulation study to evaluate the efficiency of the Two-Block (2BG) and Three-Block Gibbs Sampler (3BG) Markov Chain Monte Carlo (MCMC) algorithms in estimating posterior distributions for widely used Bayesian shrinkage models, including the Bayesian Lasso (BL) and the Spike-and-Slab shrinkage priors ([pdf](#))
 - Techniques adopted include: *Gibbs sampler, Bayesian Lasso, Spike-and-Slab priors, parallel computing*
 - **A Distributed Optimization Package for R, *University of Michigan, Ann Arbor*** *April 2022*
 - Developed an R package for distributed optimization, implementing algorithms where a global objective function, expressed as a sum of local objective functions assigned to agents (e.g., nodes in a computer network), is optimized through collaboration, with experimentation showcasing its efficacy in solving distributed statistical problems ([pdf](#))
 - Techniques adopted include: *Convex Optimization, Apache Spark, OLS and Logistic Regression*

COMPUTER SKILLS

Programming/Scripting Languages/Frameworks:	R, Python, SQL, PyTorch, TensorFlow, HTML, PHP, Javascript
Reproducible Research & High Performance Computing:	⌘TEX, Markdown, Terminal, git, Slurm

SELECTED HONORS AND AWARDS

APRIL 2022	1st Place, Capstone Project Competition in Statistical Learning, The University of Michigan
AUG 2021	Graduate Student Fellow, The University of Michigan, Ann Arbor
AUG 2021	Awardee, The International Association of Black Actuaries (IABA) - amount: \$3,000(USD)
MAY 2020	1st Place, Capstone Project Competition in Bayesian Statistics, The University of Nevada, Reno
DEC 2019	1st Place, Capstone Project Competition in Statistical Computing, The University of Nevada, Reno

LEADERSHIP AND EXTRACURRICULAR

MEMBER	Computing Committee, Dept. of Stats, Univeristy of Michigan	SEPT 2023 - PRESENT
MEMBER	Recruitment & Admissions Committee, Dept. of Stats, Univeristy of Michigan	JAN 2022 - PRESENT
MEMBER	Curriculum Committee, Dept. of Stats, Univeristy of Michigan	SEPT 2023 - PRESENT
MEMBER	American Statistical Society (ASA)	AUG 2019 - PRESENT
MEMBER	University of Nevada Actuarial Club	AUG 2019 - APRIL 2021
VICE PRESIDENT	Actuarial Science Students Association, KNUST	AUG 2015 - MAY 2016