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-Prarametric 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 2024 - Present	**Research Intern**, Center for Global Health Equity, University of Michigan
	- Work on NIH funded projects on health equity problems in developing countries
May 2020 - Aug 2020	**Predictive Modeling Intern**, EMPLOYERS Insurance Group
	- 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
	- 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 1,000+ 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

- **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:	LaTeX, Markdown, Terminal, git, Slurm

SELECTED HONORS AND AWARDS

May 2024	**Best Poster Award**, The Michigan Student Symposium for Interdisciplinary Statistical Sciences
May 2024	**Outstanding Graduate Instructor Award,** - *Honorable Mention*, Dept. of Statistics, The University of Michigan
April 2022	**1st Place**, Capstone Project Competition in Statistical Learning, The University of Michigan
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

SELECTED LEADERSHIP AND SERVICE

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
VICE PRESIDENT	Actuarial Science Students Association, KNUST	AUG 2015 - MAY 2016