Benjamin Osafo Agyare

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Education

2021 – 2026 **Ph.D Statistics, University of Michigan, Ann Arbor**.
Advisor: *Prof. Kerby Shedden.*

2019 – 2021 **M.S Statistics & Data Science, University of Nevada, Reno**.
Recipient of Full Scholarship from the Department of Mathematics and Statistics.

2013 – 2017 **B.S Actuarial Science, Kwame Nkrumah University of Science and Tech**.
Thesis title: *A Survival Analysis on the Surrender of Life Insurance Policies in Ghana*.
Advisor: *Prof. Gabriel Asare Okyere*.

Honors & Awards

2024 **Best Poster Award,** The Michigan Student Symposium for Interdisciplinary Statistical Sciences.
Outstanding Graduate Instructor Award, - *Honorable Mention* - Dept. of Statistics, UM.
2022 **1st Place**, Capstone Project Competition in Statistical Learning, The University of Michigan.
2021 **IABA Foundation Scholar,** The International Association of Black Actuaries (**IABA**) – $3,000.
2020 **1st Place**, Capstone Project Competition in Bayesian Statistics, The University of Nevada, Reno.
2019 **1st Place**, Capstone Project Competition in Statistical Computing, The University of Nevada, Reno.

Research Publications

In Preparation

1 **B. Osafo Agyare** and K. Shedden, "Kernel-based expectile regression with inference for dependent data,"

Teaching Experience

Graduate Student Instructor, *University of Michigan, Ann Arbor*

- **STATS 401 - Applied Statistical Methods II** (∼ 120 students) *Winter 2024/Fall 2023*
- **STATS 513 - Regression and Data Analysis** (Graduate Level ∼ 51 students) *Winter 2023*
- **STATS 501 - Applied Statistics II** (GLMs, Mixed Models & Semi-Parametric Models) *Winter 2023*
- **STATS 306 - Introduction to Statistical Computing** (∼ 40 students) *Winter/Fall 2022*
- **STATS 406 - Computational Methods in Data Science** (∼ 75 students) *Fall 2021*

Graduate Teaching Assistant, *University of Nevada, Reno*

- **MATH 127 - Pre-Calculus II** (∼ 70 students) *Spring 2021*
- **MATH 181 - Calculus I** (∼ 90 students) *Fall 2020*
- **MATH 126 - Pre-Calculus I** (∼ 140 students) *Fall 2019*

Teaching Assistant, *University of Ghana*

- **STAT 224 - Introductory Probability II** (∼ 60 students) *Spring 2018*
- **STAT 222 - Data Analysis I** (∼ 95 students) *Spring 2018*
- **STAT 221 - Introductory Probability I** (∼ 60 students) *Fall 2017*
- **ACTU 409 - Introduction to Actuarial Mathematics** (∼ 140 students) *Fall 2017*

Work Experience

June – Aug 2024 | **Research Intern**, *Center for Global Health Equity, University of Michigan.*

- Work on NIH funded projects on health equity problems in developing countries.

May – 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 – 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.

Presentations & Posters

Presentations

2024 **Joint Statistical Meetings**, Portland, OR, USA.

The 32nd International Biometric Conference, Atlanta, GA, USA.

Posters

2024 **The Michigan Student Symposium for Interdisciplinary Statistical Sciences**, Ann Arbor, MI, USA

Mentoring

Yunxuan "Haytham" Tang, (*currently* BS EECS at UM) *Winter 2024*

- Co-supervise Undergraduate Research Program in Statistics (URPS) project with Prof. Kerby Shedden, focusing on robust matrix factorization techniques for analyzing biomedical data.

Shuge Ouyang, (*currently* BS Math at UM) *Winter 2024*

- Co-supervise Undergraduate Research Program in Statistics (URPS) project with Prof. Kerby Shedden, focusing on robust matrix factorization techniques for analyzing biomedical data.

Computing Skills

Programming/Frameworks	R, Python, SQL, PyTorch, TensorFlow, HTML, PHP, Javascript.
Reproducible Research/HPC	LaTeX, Markdown, Terminal, git, Slurm.

Service & Professional Memberships

Service

- 2023+ **Computing Committee**, Dept. of Stats, University of Michigan, *Member*.
- **Curriculum Committee**, Dept. of Stats, University of Michigan, *Member*.
- 2022+ **Recruitment & Admissions Committee**, Dept. of Stats, University of Michigan, *Member*.
- 2015-2016 **Actuarial Science Students Association**, KNUST, *Vice President*.

Professional Memberships

- 2024+ American Statistical Association (ASA).
- Institute of Mathematical Statistics (IMS)
- International Biometrics Society (IBS).
- 2020+ Royal Statistical Society (RSS).
- 2019+ International Association of Black Actuaries (IABA).

Miscellaneous Experience

Certification

- 2021 **Certificate in Teaching Practice in Higher Education**, Association of College and University Educators (ACUE), USA.

Actuarial Exams

SOA Exams	**F**inancial **M**athematics, **P**robability, **S**tatistics for **R**isk **M**odeling.
VEE	Applied Statistical Methods, Economics, Corporate Finance.