Ian Laga
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RESEARCH INTERESTS

Bayesian methods, small area estimation, network scale-up, computational statistics, and spatial statistics.

EDUCATION

Ph.D. in Statistics (2017 - Present), Pennsylvania State University
Advisors: Le Bao and Xiaoyue Niu

B.S. in Applied Mathematics (minor in Statistics and in Computer Science) (2013 - 2017), University of Colorado - Boulder. Magna Cum Laude.

REFEREED PUBLICATIONS

Ian Laga and William Kleiber. (2017) "The Modified Matérn Process." *Stat*, 6:241-247. doi: 10.1002/sta4.152.

PREPRINTS

Ian Laga, Xiaoyue Niu, and Le Bao. "Modeling the Marked Presence-only Data: A Case Study of Estimating the Female Sex Worker Size in Malawi." Submitted to *Journal of the American Statistical Association*

Ian Laga, Dennis K.J. Lin, Kevin Quinlan, and Muzi Zhang. "Multi-Objective Optimization for Latin Hyper Cube Designs." Submitted to *Computers & Industrial Engineering*

NON-REFEREED PUBLICATIONS

Ian Laga and Xiaoyue Niu (2020). "Review of *Model-Based Geostatistics for Global Public Health: Methods and Applications*", by Peter J. Diggle and Emanuele Giorgi, *Journal of the American Statistical Association*, accepted.

Ian Laga (2019). "The POWER Structure and Why an 80% Correct Solution is Sometimes Better Than a 100% Correct Solution." In JSM Proceedings, Section on Statistical Consulting. Denver, CO: American Statistical Association. 2345-2356

ONGOING PROJECTS

Network Scale-up Model: I am currently developing new network scale-up models to better estimate hidden subpopulation sizes using aggregated relational data. I am also writing a comprehensive review of network scale-up literature to increase the popularity and feasibility of the scale-up approach.

Key population size estimation across Sub-Saharan Africa: Sub-Saharan Africa suffers from relatively high incidence of HIV, especially in key populations like Female Sex Workers. Thus, I am helping estimating the size of these key populations across Sub-Saharan Africa.

RESEARCH PRESENTATIONS

"The POWER Structure and Why an 80% Correct Solution is Sometimes Better Than a 100% Correct Solution," Topic-Contributed Session, Joint Statistical Meetings, Denver. August 2019.

"The Modified Matérn Process," SIAM Front Range Applied Mathematics Student Conference, University of Colorado at Denver, Denver, Colorado. March 2016.

POSTERS

"MCPMod for Negative Binomial Count Data," ASA NJ Chapter/Bayer Statistics and Data Insights 7^{th} Annual Workshop. November 2019.

INTERNSHIPS

Statistician Intern (Summer 2019), Bayer Corporation, Whippany, NJ

SCIENTIFIC SOFTWARE

MCPModGeneral: R-package to supplement the 'DoseFinding' package for non-normal data.

TEACHING

Lecturer:

Computation Statistics, STAT 440, Spring 2020
Mathematical Statistics, STAT 415, Fall 2018

Teaching Assistant:

Mathematical Statistics, STAT 415, Fall 2017/Spring 2018
Introduction to SAS, STAT 480, Fall 2019

OTHER PRESENTATIONS

"Introduction to RStan," Penn State Statistics Graduate Student Association Workshop, November 2019.

AWARDS/ HONORS

2019 NSF Graduate Research Fellowship Honorable Mention: National Science Foundation.

2013 - 2017 Dean's List: University of Colorado - Boulder

CU Esteemed Scholars - Sewall Award:
Awarded to high school students with 4.0 GPA and 33 ACT and above.

Engineering Differential Scholarship:
Awarded to engineering students who also received a Sewall or Presidential Scholarship.

2013 Boettcher Scholar:
Award given to top 40 high school students in Colorado. Provides full ride with room and board to any Colorado university.

VOLUNTEERING

Refereed paper for Annals of Applied Statistics, 2019

Eberly College Climate and Diversity Committee, 2018 - Present
Member

Penn State Statistics Graduate Student Association, 2017 - Present
Social Coordinator

PROGRAMMING SKILLS

R: Advanced
Python: Intermediate
C++: Intermediate