

# FAN BU

fanbu@ucla.edu

<https://fanbu1995.github.io>

## PROFESSIONAL AFFILIATIONS

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### Postdoctoral Scholar

Department of Biostatistics, University of California - Los Angeles

*Aug 2021 - present*

### Visiting Scholar

Simons Institute, University of California - Berkeley

*Sept 2022 - Nov 2022*

### Research Intern

Duke Center for AIDS Research

*May 2020 - Aug 2020*

## EDUCATION

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### Department of Statistical Science, Duke University

Ph.D. in Statistics; Dissertation: Stochastic Process Models on Dynamic Networks

*2017 - 2021*

### School of Mathematical Sciences, Peking University

B.S. in Mathematics and Applied Mathematics

*2013 - 2017*

## RESEARCH INTERESTS

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Bayesian statistics and statistical machine learning for complex and large-scale datasets; stochastic processes and dynamic models; health data science and informatics; social network analysis.

## PUBLICATIONS AND PREPRINTS

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Inferring HIV Transmission Patterns from Viral Deep-Sequence Data via Latent Spatial Poisson Processes (2022)<sup>†</sup>. *Under extended review by data consortium; full manuscript available upon request*

Adjusting for Both Sequential Testing and Systematic Error in Safety Surveillance using Observational Data: Empirical Calibration and MaxSPRT (2022). *Accepted by Statistics in Medicine*

Network Position and Emergent Phenomena: A Multi-team System Case Study (2022+). *Under revisions.*

Likelihood-based Inference for Partially Observed Stochastic Epidemics with Individual Heterogeneity (2021)<sup>†</sup>. *Under revisions for Annals of Applied Statistics; arXiv:2112.07892.*

Likelihood-based Inference for Partially Observed Epidemics on Dynamic Networks (2020)<sup>†</sup>. *Journal of the American Statistical Association* (**Winner of 2020 SBSS Student Paper Award**)

SMOGS: Social Network Metrics of Game Success (2019)<sup>†</sup>. *The 22nd International Conference on Artificial Intelligence and Statistics (AISTATS).*

Who Started It? Identifying Root Sources in Textual Conversation Threads (2018). *arXiv:1809.03648.*

## WORKING PAPERS

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Bayesian Safety Surveillance with Adaptive Bias Correction (2022+)<sup>†</sup>. *pending funders' approval; draft manuscript available upon request*

Viral and Immune Predictors of Time to Viral Rebound in SHIV-infected Infant Macaques (2021+).

(<sup>†</sup> denotes first-author work)

## AWARDS AND HONORS

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|   |                      |
|---|----------------------|
| ISBA World Meeting travel award.                            | <i>June 2022</i>     |
| Duke CFAR Fall Retreat Best Poster Award.                   | <i>October 2020</i>  |
| SBSS Student Paper Award; JSM travel award.                 | <i>August 2020</i>   |
| Honorable Mention for Ph.D. Teaching Assistant for the Year | <i>May 2020</i>      |
| Women in Machine Learning Workshop (WiML) travel award.     | <i>December 2017</i> |

## INVITED TALKS AND PRESENTATIONS

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### ORAL PRESENTATIONS:

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| Topic-contributed talk at CMStatistics 2022 (scheduled)                          | <i>December 2022</i>  |
| Invited talk at the UCLA 2022 Fall Biomathematics Seminar Series (scheduled)     | <i>November 2022</i>  |
| Invited presentation at the 2022 OHDSI Global Symposium (scheduled)              | <i>October 2022</i>   |
| Oral presentation at NSF Student Conference on COVID-19 Modeling.                | <i>January 2021</i>   |
| Invited talk at 2020 Bayesian Young Statisticians Meeting: Online (BAYSM:O).     | <i>November 2020</i>  |
| Topic-contributed talk at 2020 Joint Statistical Meetings.                       | <i>August 2020</i>    |
| Invited talk at the 3rd Annual AT&T Labs Graduate Student Symposium.             | <i>November 2019</i>  |
| Invited talk at the 2019 New England Symposium on Statistics in Sports (NESSIS). | <i>September 2019</i> |
| Spotlight talk on Duke Machine Learning Day.                                     | <i>March 2019</i>     |

### POSTER PRESENTATIONS:

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|---|----------------------|
| Poster presentation at the 2022 ISBA World Meeting.   | <i>June 2022</i>     |
| Poster presentation at the 22nd International Conference on Artificial Intelligence and Statistics (AISTATS). | <i>April 2019</i>    |
| Poster presentation at the 2018 ISBA World Meeting.   | <i>June 2018</i>     |
| Poster presentation at Women in Machine Learning Workshop (WiML) 2017.  | <i>December 2017</i> |

## PROFESSIONAL SERVICE

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|---|------------------------------------|
| Program Chair for <i>the junior section of the International Society for Bayesian Analysis (j-ISBA)</i> .   | <i>January 2022 - present</i>      |
| Judge for <i>Duke Datathon</i> .  | <i>October 2020 &amp; 2021</i>     |
| Consultant for <i>DataFest: COVID-19 Virtual Data Challenge</i> .   | <i>April 2020</i>                  |
| Consultant for <i>ASA DataFest @ Duke</i> .   | <i>April 2018 &amp; April 2019</i> |
| Journal review for: <i>Journal of the American Statistical Association</i> , <i>The Proceedings of the National Academy of Sciences (PNAS)</i> , <i>Science Advances</i> , and <i>Environmental and Ecological Statistics</i> . |                                    |

## TEACHING & MENTORING

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|---|--------------------|
| Mentor for the 2022 B.I.G. summer research program at UCLA.                                       | <i>Summer 2022</i> |
| Instructor of Record for <i>STA101: Data Analysis/Statistical Inference</i> .                     | <i>Summer 2021</i> |
| Lab instructor and teaching assistant for <i>STA199: Introduction to Data Science</i> .           | <i>Fall 2020</i>   |
| Lab instructor and teaching assistant for <i>STA723: Statistics Case Studies</i> .                | <i>Spring 2020</i> |
| Lab instructor and teaching assistant for <i>STA601: Bayesian Methods and Modern Statistics</i> . | <i>Fall 2019</i>   |
| Team manager and student mentor for <i>Duke Data+ 2019</i> .                                      | <i>Summer 2019</i> |
| Instructor of <i>Duke Statistical Science Bootcamp</i> .  | <i>August 2018</i> |

## ONGOING & PAST RESEARCH PROJECTS

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Bayesian Methods Development for Sequential Monitoring of Observational Data for Vaccine Safety, under FDA's CBER BEST collaborative contract (2021+). *Work in progress*.

The Evolution of Popularity and Images of Characters in Marvel Cinematic Universe Fanfictions (2018). (Technical report at *arXiv:1805.03774*)

Traffic Speed Nowcasting Based on Urban Road Network and Artificial Neural Network (2017). (B.S. thesis)

Detection of Differential Genetic Networks (2016). (Supported by National Undergraduate Innovation Grant of China)