# FAN BU

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https://fanbu1995.github.io

## EDUCATION

**Department of Statistical Science, Duke University** *2017 - 2021*
Ph.D. in Statistics.

**School of Mathematical Sciences, Peking University** *2013 - 2017*
B.S.(with honors) in Data Science and Big Data Technology.

## RESEARCH INTERESTS

Bayesian statistics and statistical machine learning; stochastic and dynamic modeling; social network analysis. With applications in infectious disease modeling, observational health data analysis, social sciences, and sports analytics.

## PUBLICATIONS AND PREPRINTS

**Fan Bu**, Allison E. Aiello, Jason Xu, and Alexander Volfovsky (2020). Likelihood-based Inference for Partially Observed Epidemics on Dynamic Networks. *Journal of the American Statistical Association* (**Winner of 2020 SBSS Student Paper Award**)

**Fan Bu**, Sonia Xu, Katherine Heller, and Alexander Volfovsky (2019). SMOGS: Social Network Metrics of Game Success. *The 22nd International Conference on Artificial Intelligence and Statistics (AISTATS).*

Wei Zhang, **Fan Bu**, Derek Owen-Oas, Katherine Heller, and Xiaojin Zhu (2018). Who Started It? Identifying Root Sources in Textual Conversation Threads. *arXiv:1809.03648.*

## INVITED TALKS AND PRESENTATIONS

Oral presentation at NSF Student Conference on COVID19 Modeling *January 2021*

Invited talk at 2020 Bayesian Young Statisticians Meeting: Online (BAYSM:O) *November 2020*

Topic-contributed talk at 2020 Joint Statistical Meetings. *August 2020*

Invited talk at the 3rd Annual AT&T Labs Graduate Student Symposium. *November 2019*

Invited talk at the 2019 New England Symposium on Statistics in Sports (NESSIS). *September 2019*

Poster presentation at the 22nd International Conference on Artificial Intelligence and Statistics (AISTATS). *April 2019*

Spotlight talk at the Duke Machine Learning Day. *March 2019*

Poster presentation at the 2018 ISBA World Meeting. *June 2018*

Poster presentation at Women in Machine Learning Workshop (WiML) 2017. *December 2017*

## AWARDS AND HONORS

Duke CFAR Fall Retreat Best Poster Award. *October 2020*

SBSS Student Paper Award; JSM travel award. *August 2020*

Women in Machine Learning Workshop (WiML) travel award. *December 2017*

## TEACHING

Instructor of record for *STA101: Data Analysis/Statistical Inference* (scheduled). *Summer 2021*

Lab instructor and teaching assistant for *STA199: Introduction to Data Science.* *Fall 2020*

Lab instructor and teaching assistant for *STA723: Statistics Case Studies.* *Spring 2020*

Lab instructor and teaching assistant for *STA601: Bayesian Methods and Modern Statistics.* *Fall 2019*

Instructor of *Duke Statistical Science Bootcamp.* *August 2018*

## PROFESSIONAL SERVICE

Judge for *Duke Datathon 2020.* *October 2020*

Consultant for *DataFest: COVID-19 Virtual Data Challenge.* *April 2020*

Reviewer for *Science Advances.* *August 2019 - July 2021*

Reviewer for *Journal of the American Statistical Association.* *June 2021*

Team manager and mentor for *Duke Data+ 2019.* *May-August 2019*

Consultant for *ASA DataFest @ Duke.* *April 2018 & April 2019*

## SKILLS

**Programming Languages**: R, Python, MATLAB, Julia, SQL.

**Languages**: Mandarin (native) and English (proficient)

## ONGOING AND PAST RESEARCH PROJECTS

Likelihood-based Inference for Partially Observed Stochastic Epidemics with Individual Heterogeneity (2021+). (Ongoing work with Alexander Volfovsky and Jason Xu)

Modeling HIV Transmission Flow From Viral Deep-sequencing Data: A Poisson Spatial Process Approach (2021+). (Ongoing work with Jason Xu and Oliver Ratmann.)

Autologous Virus Neutralizing Antibodies Delay Virus Rebound in Oral Infant Shiv Model (2021+). (Ongoing work with Stella J Berendam, Sallie Permar, Cliburn Chan, et al.)

Network Position and Emergent Phenomena: A Multi-team System Case Study (2021+). (Ongoing joint work with Raquel Asencio, Liann Tucker, Gabriel Varela, James Moody, and Alexander Volfovsky)

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)