Subekshya Bidari

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Employment

July 2022 - **Postdoctoral Research Scientist**, Columbia University in the city of New York
Developed mechanistic models of infectious disease transmission and used data assimilation methods to better understand disease transmission dynamics and control strategies

Education

Aug 2022 **PhD in Applied Mathematics**, University of Colorado Boulder

Aug 2020 **Masters of Science**, *Applied Mathematics*, University of Colorado Boulder

May 2017 **Bachelors of Science**, *Mathematics*, Trinity College

Experience and Skills

Programming Languages Python (NumPy, Pandas, Matplotlib, SciPy, Scikit-learn, Seaborn, PyTorch), R, Matlab, SQL, Bash Scripting

Modeling & analysis Statistical Analysis, Bayesian Data Analysis, Optimization, Particle filters, Stochastic Processes, Time Series Analysis, Numerical Methods, Data Driven Modeling

Machine Learning Regression, Classification, Decision Trees, Support Vector Machines, Linear Discriminant Analysis, Naive Bayes, KNN, Principal Component Analysis, Clustering

Cloud AWS cloud services, High Performance Computing

Projects and Publications

Developed a mechanistic model of collective foraging decision in animal groups and used Bayesian data analysis methods to incorporate animal movement and foraging data into the model using hierarchical methods. *Stochastic dynamics of social patch foraging decisions, S. Bidari, A. E. Hady, J. D. Davidson, and Z. P. Kilpatrick, Physical Review Research (2022).*

Developed and analyzed a dynamic model and a spatial model of decision making in a large population of self organizing individuals. *Hive geometry shapes the recruitment rate of honeybee colonies, S. Bidari and Z. P. Kilpatrick, Journal of Mathematical Biology (2021)* and *Social inhibition maintains adaptivity and consensus of foraging honeybee swarms in dynamic environments, S. Bidari, O. Peleg, and Z. P. Kilpatrick, Royal Society open science (2019)*

Analysed data from flu outbreaks to fit a stochastic model of infectious disease spread and examine the effect of outbreak control measures. *Stochastic models of influenza outbreaks on a college campus, S. Bidari and E. E. Goldwyn, Letters in Biomathematics (2019).*

Created a Generalized Linear Model to predict power outages caused by hurricanes.

Certifications

Coursera AWS Cloud Technical Essentials, Applied Machine Learning in Python, Introduction to Data Science in Python, SQL for Data Science, Data Analysis with Python

Other Experience

Teaching Worked as a teaching assistant for 4+ years, assisting students in a one-on-one and lecture setting for higher-level math courses such as multi-variable calculus, differential equations, probability and statistics, and linear algebra.