Sean M. Meehan

Mathematician/Data Scientist

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Professional Summary

Published research mathematician and recent PhD graduate focusing in the areas of probability, statistics, combinatorics, and discrete mathematics - more specifically, the area of random matrix theory and the study of the eigenvalues and associated eigenvectors of various random models. Adept at applying the underlying probabilistic and statistical concepts in real-world settings. More generally, able to find the source of many natural problems and work toward optimal solutions.

Academic Summary

Incredibly proficient in most areas of mathematics, including but not limited to calculus, linear algebra, differential equations, probability, statistics, combinatorics, and discrete mathematics. Knowledgable in programming languages, particularly Python and R. Excels in teaching and relating math to others, winning multiple teaching awards while in graduate school. Experience with data science concepts, such as data mining and machine learning, through online self-study via Coursera and Kaggle.

Work experience

Research Mathematician — May 2013 - May 2019

The Ohio State University

Solved universality problems and co-authored research paper in random matrix theory, resulting in publications and a doctorate degree in mathematics.

Ohio State Graduate Teaching Assistant — May 2013 - May 2019

The Ohio State University

Furthered the mathematical education of several hundred OSU students, achieving excellent reviews in both student performance as well as student reviews. Received the Graduate Associate Teaching Award, given to just 10 graduate students out of 11,000+.

Ohio State FYTA Mentor — August 2015 - December 2015

The Ohio State University

Oversaw and advised three first-year teaching assistants, observing and then providing feedback on their methods of teaching. Reported to the TA Coordinator on the significant progress that was made.

Education

Ph.D., Mathematics — August 2013 - August 2019

The Ohio State University

Thesis: On Some Universality Problems in Combinatorial Random Matrix Theory. Advised by Dr. Hoi Nguyen.

M.S., Mathematics — August 2013 - August 2016

The Ohio State University

Obtained through fulfillment of Candidacy Exam requirement. Advised by Dr. Hoi Nguyen.

B.S., Mathematics (Honors Concentration) — August 2009 - May 2013

The University of Notre Dame

Graduated Cum Laude with Senior Thesis. Advised by Dr. David Galvin.

Relevant Projects

NBA 3Q O/U Predictive Model - Developed an accurate model, using random forest classifiers, to predict the 3Q total points scored in an NBA game given the first half box score. This involved web-scraping (using BeautifulSoup) historical data, cleaning data, modeling, and testing for accuracy. The model surprisingly performed at MSE comparable to Vegas.

Gamma Process Publication - Extensively studied a recent publication and fully implemented the authors' NBA O/U gamma process model in Python, which performs at a 10.9% ROI. This required large collection of data. Currently optimizing their results and preparing for publication.

HQ Trivia Bot - Designed an interface to convert live trivia questions from image to txt, query the relevant question and answers via Google, and return the choice with the most results (all within 5 seconds). Performed at about 90% accuracy.

Skills

Mathematics

Calculus, linear algebra, differential equations, probability, statistics, combinatorics, discrete mathematics, and others.

Machine Learning

Linear regression, logistic regression, neural networks, support vector machines, k-means clustering, decision tree algorithms, etc.

Python

Pandas, numpy, scikit-learn, etc.

Research

Critical thinking, problem solving.

Public Speaking

Comfort, presence, confidence.

Teaching

Preparation, organization, cogent communication.

SQL

CREATE TABLE, SELECT, INSERT, DROP, ORDER BY, WHERE clauses, JOIN(s).

Tableau

Importing data, visualizing data, statistical summaries.

R

ggplot2, dplyr, etc.