Jacob Mashburn

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Education

Texas A&M University, College Station, TX   August 2022
Doctor of Philosophy in Mathematics
Dissertation: Distributions and von Neumann Algebras over Fock Spaces with Depth-Two Action
Relevant Coursework: Topics in Mathematical Data Science, Random Matrix Theory, Stochastic Differential Equations

Texas A&M University, College Station, TX   May 2016
Bachelor of Arts in Mathematics
Minor in Economics

Work Experience

Texas A&M University Mathematics Department   August 2016 to August 2022
Graduate Lab Instructor, August 2017 to December 2021
- Taught approximately 300 engineering students (across 3 semesters) MATLAB and the Symbolic Math Toolbox.
- Taught approximately 400 engineering students (across 4 semesters) Python, along with the NumPy and SymPy packages.
- Administered and graded weekly coding assignments and reported to administration.

Graduate Instructor of Record, January 2020 to July 2022
- Instructed approximately 200 students across 5 semesters in Explorations in Mathematics and Business Calculus.
- Co-wrote monthly exams and weekly quizzes with one other graduate instructor.

Texas A&M University Mays Business School   August 2015 to August 2016
Research Assistant for Dr. Korok Ray, August 2015 to August 2016
- Conducted several MATLAB optimization simulations to supplement Dr. Ray's economic research.
- Edited several of Dr. Ray's research papers, from rough draft to final journal-ready draft, using LaTeX.

Honors & Awards

TAMU Institute of Data Science Competition – Finalist & Best Use of External Data   April 2022
- Collaborated with a team of graduate students to collect metadata (from TAMU Libraries) for research articles from authors in the TAMU Mathematics, Statistics, and Computer Science departments.
- Developed a Python script to clean collected data by cross-referencing with Cornell's arXiv database.
- Produced several visuals in VOSviewer of recent collaborative research output between these departments.
- Identified emerging sub-fields of mathematics in interdepartmental applications.
- Proposed directions for future collaborations based on these findings.

TAMU Pi Mu Epsilon – National Honor Society for Mathematics Majors

Selected Publications

Some Fock spaces with depth two action   March 2021
- Coauthored with Dr. Michael Anshelevich (Texas A&M University), arXiv pre-print (arXiv:2103.13936), currently undergoing journal review.

Service

Graduate Student Organization, TAMU Mathematics Department
GSO Seminar Organizer   August 2019 to May 2022
- Coordinated weekly research talks held throughout six semesters.
- Curated each semester's schedule by inviting speakers from department faculty and graduate students.
- Communicated with the department via weekly email and a seminar website.

Skills

Python, MATLAB, C++, LaTeX, R, Data Analysis, Data Visualization, Optimization, Teaching/Mentoring