Anisha Jean Mathias

Postdoctoral Researcher

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⚗ Toyon Statistical Lab

Professional Experience

Postdoctoral Research Associate   09/2024-Present
Department of Mathematics, University of Arizona

* Collaborating with Dr. Henry Scharf on statistical models for dolphin movement tracking.
* Analyzing animal movement patterns with Bayesian models using R for visualization.

DCC Research Associate   05/2024–08/2024
Research, Innovation and Impact, University of Arizona

* Researched knowledge graphs to enhance query response accuracy from RAG-extracted documents.
* Created visualizations in PowerBI and Tableau for effective data interpretation.

Assistant Professor   08/2022 – 11/2023
Department of Mathematics, St Aloysius College

* Delivered graduate-level mathematics courses.
* Led academic collaborations and developed interdisciplinary online certificate program LaTex.

Teaching Assistant   01/2019– 01/2021
Department of Mathematics, CHRIST (Deemed to be University)

*Assisted professors with practical sessions using Python.

Education

Ph. D in Mathematics   06/2018 – 11/2023

CHRIST (Deemed to be University), India
Thesis title: *A Study on Domination in Signed Graphs*

M. Phil Mathematics   06/2017 – 05/2018

CHRIST (Deemed to be University), India
Thesis title: *Edge Domination on Certain Families of Chemical Graphs.*

M.Sc. Applied Mathematics   06/2014 – 06/2016

Amity University, India.

B.Sc. Mathematics   06/2012 – 06/2014

University of Delhi, India

Research Publications

Journal Articles

1 Mathias, A. J., Sangeetha, V., & Acharya, M. (2025). A study on the restrained domination number in diverse families of derived signed graphs. *Discrete Mathematics, Algorithms and Applications*.

2 Mathias, A. J., Sangeetha, V., & Acharya, M. (2023). Restrained critical and abundant signed graphs. *Advances and Applications in Discrete Mathematics*, *38*(1), 49–68.
🔗 doi:https://doi.org/10.17654/0974165823018

3 Mathias, A. J., Sangeetha, V., & Acharya, M. (2021). Critical concepts of restrained domination in signed graphs. *Discrete Mathematics, Algorithms and Applications*, 1–11.
🔗 doi:https://doi.org/10.1142/S1793830922500100

4 Mathias, A. J., Sangeetha, V., & Acharya, M. (2020). Restrained domination in signed graphs. *Acta Universitatis Sapientiae, Mathematica*, *12*(1), 155–163. 🔗 doi:10.2478/ausm-2020-0010

5 Mathias, A. J. (2018b). Edge domination number on graph variations. *International Journal of Mathematics And its Applications*, *6*(1), 185–193. Retrieved from 🔗 http://ijmaa.in/v6n1-s/185-193.pdf

Thesis

- 🔖 Ph. D Thesis: A study on domination in signed graphs
- 🔖 M. Phil Thesis: Edge Domination in Certain Families of Chemical Graphs

Teaching Experience

🔖 **2025: University of Arizona, USA**

MATH/ DATA 363 : Introduction to Statistical Methods

🔖 **2023: St Aloysius College, India**

MATH G 503 DC1.1: Numerical Analysis
MATH G503 OE1.1(B): Applied Mathematics

🔖 **2022: St Aloysius College, India**

MATH G 503 DC1.1: Elementary Graph Theory
MATH G503 OE1.1(A): Introductory Mathematics

🔖 **2022: St Aloysius College, India**

MATH G 503 DC1.1: Elementary Graph Theory
MATH G503 OE1.1(A): Introductory Mathematics

🔖 **2020: CHRIST(Deemed to be University), India**

MAT551B: Mathematical Modelling using Python
MAT451: Introduction to Mathematical Modelling using Python
BBA134: Business Mathematics

Teaching Experience (continued)

2019: CHRIST(Deemed to be University), India

MAT 651C: Computational and Applied Mathematics using Python
MAT 651: Complex Analysis using Python
MAT 351: Introduction to Python Programming

Developed Courses

Designed and offered online certificate course: **Introduction to Latex** (Online lectures available: Provided on Request)

Certification

2024	**Google Advanced Data Analytics:** Awarded certificates upon successful completion of the courses authorized by Google and offered through Coursera.
	Advanced Data Visualization with Tableau, Awarded certificate on successfully completing the course authorized by Tableau Learning Partner and offered through Coursera.
	Foundations of Data Science, Awarded certificate on successfully completing the course authorized by Google and offered through Coursera.
2021	**Introduction to Data Science in Python**, Awarded course certificate on completing first course out of five enrolled course '**Applied Data Science with Python**' authorized by University of Michigan and offered through Coursera.
2020	**Mathematical Foundations for Cryptography**, Awarded course certificate on successfully completing an online non-credit course authorized by University of Colorado System and offered through Coursera.
2011-2013	**A-Level Diploma in Information Technology** , National Institute of Electronics and Information Technology. Project title: *Hospital Management*

Technical Skills

Programming Languages	Python, MATLAB, R
Misc.	LaTeX typesetting, Tableau and PowerBI.

Language

English

Hindi