

Dr. Aastha Madonna Sathe

*Assistant Professor
Department of Mathematics
St. Stephen's College
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EDUCATIONAL QUALIFICATIONS

- ❖ Completed M.Tech in Industrial Mathematics and Scientific Computing and Ph.D. (Dual Degree) from IIT, Madras in December, 2021.
- ❖ Completed M.Sc. in Mathematics from IIT, Madras in July, 2014.
- ❖ Completed B. Sc. in Mathematics (Hons) from St. Stephen's College, Delhi University in June, 2012.
- ❖ Completed my full schooling from Christ Church Girls' Senior Secondary School, Jabalpur in 2009.

RESEARCH & PUBLICATIONS

- Subject : Mathematics
Area of Research : Computational Statistics and Data Science
Ph.D. Guide : Prof. Neelesh S. Upadhye
Specialization : (a) Estimation Problems related to Stable Distributions
(b) Financial Time Series Models, Forecasting using Machine Learning Algorithms

Publications-Citations: 51:

1. Sathe, Aastha M. and Upadhye, Neelesh S. (2020). Estimation of the Parameters of Multivariate Stable Distributions. *Communications in Statistics - Simulation and Computation*, Pages 1-18, DOI: 10.1080/03610918.2020.1784432. **(Published)**.
2. Sathe, Aastha M. and Upadhye, Neelesh S. (2021). Estimation of the Parameters of Symmetric Stable ARMA and ARMA-GARCH Models. *Journal of Applied Statistics*, 49:11, Pages 2964-2980, DOI: 10.1080/02664763.2021.1928019. **(Published)**
3. Sathe, Aastha M. and Upadhye, Neelesh S. (2021). Estimation of the Parameters of Vector Autoregressive Moving Average (VARMA) Time Series Model with Symmetric Stable Noise. *International Journal of Advances in Engineering Sciences and Applied Mathematics*, 13, Pages 206–214. <https://doi.org/10.1007/s12572-021-00307-8>. **(Published)**
4. V. Kumar, A. M. Sathe, N. S. Upadhye, J. Jha. (2022). “Statistical analysis of reproduction number of India for COVID-19 pandemic,” *Journal of Orissa Mathematical Society*, 41 (1-2), Pages 10-28. **(Published)**.
5. Sathe, Aastha M., Neelesh S. Upadhye, and Agnieszka Wyłomańska.(2023) ”Forecasting of symmetric α -stable autoregressive models by time series approach supported by artificial neural networks.” *Journal of Computational and Applied Mathematics*, 425 : 115051. **(Published)**
6. Sathe, A.M., Upadhye, N.S. and Wyłomańska, A.(2024) Forecasting multidimensional autoregressive time series model with symmetric α -stable noise using artificial neural networks. *Stat Methods Appl* 33, 783–805 . **(Published)**
7. Aastha M. Sathe, Supraja R., Aditya Antony Thomas,(2025) Enhancing agricultural sustainability: Time series forecasting with ICEEMDAN-VMD-GRU for economic-resilience, *Results in Engineering*, Volume 27,106423, ISSN 2590-1230, <https://doi.org/10.1016/j.rineng.2025.106423>. **(Published)**

Conference Papers/Presentations (International):

1. Attended and presented my second paper entitled “Estimation of the Parameters Symmetric Stable ARMA and ARMA-GARCH Models” in the 13th International Conference on Computational and Financial Econometrics, held at the Senate House, University of London, UK held from 14-16 December, 2020.
2. Attended and presented on “Stable distributions and its applications” in an international conference on “Emerging Methodologies in Theoretical and Applied Statistics” organized by Department of Statistics, BHU from September 18-20, 2018.

Research Guide:

Presently guiding two research scholars under me in VIT-AP, namely Ms. Vasavi Chunduru and Mr. Naresh Chitturi since January 2025. The former’s research area is in tempered stable distributions while the latter’s research work is in geometric stable distributions.

EMPLOYMENT DETAILS:

- Appointed as Assistant Professor-Grade 1 in VIT-AP, School of Advanced Sciences-Mathematics since 8th, November, 2022 till 16th May, 2026 .
- Worked as Post Doctoral Researcher in Centre of Excellence in Computational Mathematics and Datascience, IIT Madras from 1st April, 2022 - 31st October, 2022.
- Worked as Data Analyst in MPM Infosoft Pvt. Ltd., Chennai from 1st April, 2021 to 28th February, 2022.

WORKSHOPS

- Workshop on “Advanced Mathematical Methods for Real Data Analysis from PDE, held at IIT, MADRAS, Department of Mathematics in March, 2018.

SCHOLASTIC ACHIEVEMENTS

- 132 - All India rank in IIT-JAM, 2012.
- 406 - All India rank in GATE, 2015.
- HTRA Scholarship from IIT Madras during M.Tech-Ph.D.

SKILLS

- Languages: Hindi and English.
- Educational Softwares: Mathematica, LaTeX, MATLAB, R and Python.
- Operating Systems: Windows and Linux.

COURSES TAUGHT AND OTHERS

- I was the teacher assistant of the courses Applied Statistics, Functions of Several Variables, Differential Equations and Discrete Mathematics for the period of Jan-2016 to December-2020 at IIT Madras.
- Courses taught in VIT-AP are as follows: Calculus for engineers, Applied Statistics with R Lab, Financial Mathematics, Fundamentals of Datascience with Python lab, Introduction to Regression Analysis and Statistical Methods, Time Series Analysis and Forecasting and Fundamentals of Statistics.
- Was appointed as the course coordinator for the course-Fundamentals of Statistics, Winter 2024-25.
- I am a passionate learner and a researcher and enjoy teaching.

DECLARATION

This is to declare that all the information provided above are precise and correct to the best of my knowledge.

Yours sincerely

Place: Delhi

(Dr. Aastha M. Sathe)