

# Dr. Neelesh S. Upadhye

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Indian Institute of Technology Madras  
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## Contact Information

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## Personal Information

Date of Birth: 06-December-1980  
Age (in years): 37  
Gender: Male

Marital Status: Married  
Nationality: INDIAN

## Education

**Ph.D. Mathematics**, Indian Institute of Technology Bombay, 2009. (CGPA: 9.67/10)

*Dissertation:* Compound Negative Binomial Approximations to Sums of Random Variables

*Supervisor:* Professor P Vellaisamy

**M.Sc. Mathematics**, Indian Institute of Technology Bombay, 2003. (CGPA: 7.8/10)

**B.Sc. Mathematics**, Wilson College Mumbai 2001. (Percentage: 80.3/100)

## Employment

Assistant Professor, Department of Mathematics, Indian Institute of Technology Madras, September 2012–present.

Quantitative Researcher, Dolat Investments Ltd., Mumbai, August 2009–September, 2012.

Teaching Assistant, Department of Mathematics, Indian Institute of Technology Bombay, July 2003–July 2009.

## Fields of Research Interest

Probabilistic Approximations, Compound Poisson and Compound negative binomial Approximations, Distribution Theory, Negative binomial perturbations and Poisson perturbations, Market Microstructure, Fractals, Data Science.

## Publications

Kumar, A. N. and Upadhye, N. S. (2017). On Discrete Gibbs Measure Approximation to Runs. Preprint <https://arxiv.org/abs/1701.03294>.

### *Publications in Refereed Journals*

Upadhye, N. S. and Kumar, A. N. (2018). Pseudo-binomial Approximation to  $(k_1, k_2)$ -runs. To appear in *Statistics & Probability Letters*.

Kumar, A. N. and Upadhye, N. S. (2018). On Generalizations of  $(k_1, k_2)$ -runs. To appear in *Metrika*.

Jagannath, R. and Upadhye, N. S. (2018). The LASSO estimator: Distributional properties. To appear in *Kybernetika*.

Kumar, A., Upadhye, N. S., Wylomańska, A. Gajda, J. (2018). Tempered Mittag-Leffler Lévy processes. To appear in *Communications in Statistics: Theory and Methods*.

Kumar, A. N. and Upadhye, N. S. (2017). On perturbations of Stein operator. *Communications in Statistics: Theory and Methods*, **46**, 9284 - 9302.

Upadhye, N. S., Čekanavičius V. and Vellaisamy, P. (2017). On Stein operators for discrete approximations. *Bernoulli*, **23**, 2828-2859.

Kumar, A. N. and Upadhye, N. S. (2016). On tail behavior of functions of random variables. *International Journal of Pure and Applied Mathematics*, **108**, 123 - 139.

Upadhye N. S. and Vellaisamy, P. (2014). Compound Poisson approximation to sums of compound negative binomial variables. *Methodology and Computing in Applied Probability*, **16**, 951-968.

Upadhye N. S. and Vellaisamy, P. (2013). Improved bounds for approximations to compound distributions. *Statistics & Probability Letters*, **83**, 467-473.

Vellaisamy, P., Upadhye, N. S. and Čekanavičius V. (2013). On Negative Binomial Approximation. *Theory of Probability & Its Applications*, **57**, 97-109.

Vellaisamy, P. and Upadhye, N. S. (2009). On the sums of compound negative binomial and gamma random variables. *Journal of Applied Probability*, **46**, 272-283.

Vellaisamy, P. and Upadhye, N. S. (2009). Compound negative binomial approximations for sums of random variables. *Probability and Mathematical Statistics*, **29**, 205-226.

Vellaisamy, P. and Upadhye, N. S. (2007). On the negative binomial distribution and its generalizations. *Statistics and Probability Letters*, **77**, 173-180.

## Seminars and Conferences

Compound Poisson approximation to sums of compound negative binomial variables. *Progress in stein's method*, National University of Singapore, Singapore (2009).

On Stein operators for discrete approximations. *Workshop on New Directions in Stein's Method*, National University of Singapore, Singapore (2015).

Chair of the Session. *Workshop on New Directions in Stein's Method*, National University of Singapore, Singapore (2015).

## Teaching Assistance

*Department of Mathematics, IIT Bombay*

Stochastic Processes

Probability Theory

Statistical Inference

Calculus-I/II

Linear Algebra.

## Teaching

*Department of Mathematics, IIT Madras*

Calculus-I: Functions of One Variable (Jul-Nov 2012, Jul-Nov 2013)

Functions of Several Variables (Jul-Nov 2017)

Probability Theory (Jan-May 2013, Jul-Nov 2015)

Probability, Statistics and Stochastic Processes (Jan-May 2015)

Stochastic Methods in Industry (Jul-Nov 2013, Jul-Nov 2014, Jul-Nov 2015, Jul-Nov 2016, Jul-Nov 2017)

Introduction to Mathematical Statistics (Jul-Nov 2013, Jan-May 2014)

Applied Stochastic Processes (Jul-Nov 2016)

Applied Statistics (Jan-May 2016, Jan-May 2017)

## Reviewing and Editorial Services

Reviewer for the Journals :

Communications in Statistics: Theory and Methods.

Communications in Statistics: Simulation and Computation.

Statistics & Probability Letters.

Kybernetika.

Vietnam Journal of Mathematics.

Bulletin of the Malaysian Mathematical Sciences Society.

Member of Editorial Board for the Journal "Modern Management Forum"

## Activities and Responsibilities at Institute

M.Sc. Seminar In Charge: Jan-May 2017

MA2040 Coordinator for Batch of approximately 500 students : Jan-May 2015.

Member of Joint Seat Allocation Authority (JoSAA) in 2015 , 2016, 2017.

Member of Institute Student Elective Allocation Tool (SEAT): 2015 - present.

Department Representative for Institute Time Table Committee 2014 - 2015

Department Workload in Charge : 2014 - 2015.

Ph.D. Selection process in Charge : 2017 - 2018.

GATE/JEE Vetter/Setter (more than once)

FORAYS (outreach Program) Coordinator : December 2015.

Member of Departmental Finance Committee : 2016 - 2017.

Member of Departmental Post Doc Application Screening : 2016 - 2017.

Short Term Course on Bayesian and Classical Statistics : September, 2015.

Short Term Course on Mathematical Finance:Theory and Practice : January, 2017.

## Awards and Honors

Senior Research Fellowship (SRF-CSIR) in Department of Mathematics, IIT Bombay-2008.

Junior Research Fellowship (JRF-CSIR) in Department of Mathematics, IIT Bombay-2006.

Senior Research Fellowship (SRF) in Department of Mathematics, IIT Bombay-2005.

Junior Research Fellowship (JRF) in Department of Mathematics, IIT Bombay-2003.

Graduate Aptitude Test in Engineering (GATE) 2003 (94.8 percentile).

Wilson College Trophy for Securing First rank in the college at undergraduate level -2001.

## References

Dr. P Vellaisamy

Professor

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Dr. A. D. Barbour

Professor

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