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Academic Experience

- 12/02 – present Tata Institute of Fundamental Research, School of Technology and Computer Science, Mumbai.
Senior Professor (Jan 2021- present), Dean (Jan 2017 – Sep 2021), Professor (Jul 2011 – Dec 2020), Associate Professor (2004-11), Reader (2002-04).
- 11/96 – 12/03 Indian Institute of Technology Delhi, Industrial Eng. Group, Dept. of Mech. Eng., Associate Professor (2002); Assistant Professor (1997 – 2002)

Corporate experience before joining academia (after PhD)

- 9/95 - 10/96 Andersen Consulting, New Delhi. Senior Consultant
- 9/93 - 6/95 American Credit Indemnity (Company of Dun & Bradstreet Corporation) Baltimore, MD. Specialty credit insurance company. Director Quantitative Analysis

Education

- 89-93 Ph.D., Operations Research, Stanford University
- 89-92 M.S., Statistics, Stanford University
- 85-89 B.Tech., Mech. Eng., Indian Institute of Technology Delhi

Selected visiting and adjunct academic positions

- Jan 22 – present Distinguished Associated Faculty, Computer Science, Ashoka University
- Mar 16 – Feb 17 Adjunct academic, CAFRAL (Centre for Advanced Financial Research and Learning). Research wing of Reserve Bank of India. Mumbai
- Sep-Dec 15 Senior Academic Fellow, CAFRAL, Research wing of Reserve Bank of India. Mumbai
- Nov 13 (1 wk)
May 15 (1 wk) Department of Applied Mathematics, Ecole Polytechnique, Palaiseau, Cedex, France
- Oct-Nov 12 ICERM (Institute for Computational and Experimental Research in Mathematics) Brown University

Nov 11 (2 wk)	Korteweg-de Vries Institute for Mathematics, University of Amsterdam, Visiting Professor on the STAR Grant
Oct 10, Apr-May 11	School of Mathematical and Computer Sciences, Heriot Watt University, Visiting Fellow on EPSRC Grant
June 10 (1wk)	Newton Institute of Mathematical Sciences, Cambridge University, UK. Invited guest in a program on Stochastic Network.
Summers 04, 05, 07	Graduate School of Business, Columbia University
Summers 97, 98, 99, 04, 05, 07	Industrial Engineering and Operations Research, Columbia University
3/06 – 12/06	Indian School of Business, Hyderabad
1/02 – 4/02	Tata Institute of Fundamental Research, School of Technology and Computer Science, Mumbai
5/01 – 6/01	University of Twente, Netherlands. Computer Science Department
1/2000 – 4/2000	Stanford University, Department of Management Science and Engineering
7/03 – 12/05	Indira Gandhi Institute for Developmental Research, Mumbai. Adjunct Associate Professor

Publications The list is attached separately

Editorial boards, professional service

2017 – present	Associate Editor, Stochastic Systems
2008 – 2016	Associate Editor, Mathematics of Operations Research
2003-2009	Associate Editor, Management Science. In the area of Stochastic Models and Simulation
2007 - 2010	Associate Editor, ACM TOMACS. In the area of Monte Carlo simulation
2021 – Present	Chair (Dec 21- Dec 22), Member (Dec 20 - Dec 23), INFORMS Applied Probability Society Prize Selection Committee
2021 – Present	Member of Committee for modelling of medical oxygen requirements across states and UT. Under Niti Aayog
2021 – present	Member, Lancet Covid-19 Commission India Task Force
2019 – present	Member, Bombay Chamber of Commerce, Banking, Finance and Economics Committee

2018 – present	Member, Board of Studies, School of Mathematical Sciences at the NMIMS, Mumbai
2016 – 2018	Member, National Advisory Board, Economic Sciences at IIT Kanpur
2016 – 2019	Member, Academic Council, Indira Gandhi Institute for Developmental Research, Mumbai
2008 - 2010	Guest Editor for a special issue of Annals of Operations Research
2006, 2008	Track Coordinator, Risk Analysis, Winter Simulation Conference

Program Committee Member

- ACM Sigmetrics (2021- present), INFORMS Nov. 2018, INFORMS Applied Probability Conference, July 2017, Scientific Committee Member, Statistical Methods in Finance Conference, CMI 2016, INFORMS Applied Probability Conference 2015, IFIP Performance 2015

Awards and recognition

- Best paper award at the ICST Sixth International Conference on Performance Evaluation Methodologies and Tools (Valuetools 2012) for the paper The Concert Queueing Game with Random Arrivals Volume
- Best paper award at CRISIL Doctoral Symposium 2017 won by graduate student Anand Deo for joint work on Calibration of Credit Default Probabilities in Discrete Default Intensity and Logit Models
- Ranked amongst the most productive researchers in management from India (for period 1990-2009) in a study conducted by researchers from Aditya Birla Centre at the London Business School
<http://www.peerpower.com/et/3464/Taking-stock-of-Indian-management-research>
- Best paper award at the ICST Fourth International Conference on Performance Evaluation Methodologies and Tools (Valuetools 2009) for the paper The Concert/Cafeteria Queueing Problem: A Game of Arrivals
- Wockhardt Foundation Shining Star Award. January 2022
- Recipient of Yahoo Academic Research Grant for the year 2009-10
- Faculty Partnership award from IBM Research Lab Yorktown Heights for the year 2001-2002
- First Patent Invention Award, IBM Research Lab India, 2000
- Fellowship and continued support, Department of Operations Research, Stanford University, 1989-93

- Merit scholarship for topping in the Department of Mechanical Engineering in fourth and fifth semesters (1987-88), IIT Delhi

Former PhD students

- 1) Santanu Dey. 2013. Goldman Sachs, 2013 – 15. Unfortunately, Santanu passed away in 2015
Optimal Change of Measure for Model Selection and Efficient Simulation of Rare Event Probabilities with Financial Applications
- 2) Ankush Agarwal. 2015. Faculty at Adam Smith Business School, Glasgow University
Monte Carlo Based Methods for Pricing American Options
- 3) Karthyek RA Murthy. 2015. Faculty at Singapore UTD.
Rare Events in Heavy Tailed Stochastic Systems: Algorithms and Analysis
- 4) Tushar Raheja. 2016. (IITD, jointly with Prof. Kiran Seth, IITD) Popular writer, film maker
Modeling traffic congestion – to wait or to be late
- 5) Sarat Babu Moka. 2017. Post-doc at University of Queensland, Australia
Invariant Measures for Queueing and Spatial Markov Processes: Algorithms and Analysis
- 6) Anand Deo. 2021. Post-doc at Singapore UTD.
An Asymptotic Study of Risk in Financial Systems - Algorithms and Analysis

Current PhD students

1. Shubhada Agarwal
Sequential Learning and Bandits
2. Anirban Bhattacharjee
(Tentative) Bandits and Rare Events
3. Sushant Vijayan
(tentative) Reinforcement Learning

Post-doctoral visitors mentored

- Poonam Kesarwani. Jan. 2020 – Nov. 2021. (PhD IIT Kanpur)
- Subhashini Krishnasamy. September 2017 - November 2018. (PhD UT Austin)
- Vineeth Chintala April - June 2017. (PhD TIFR Mathematics, Mumbai)
- Tejas Bordas. June - September 2016. (PhD IIT Bombay)

Doctoral committees

- External Examiner for PhD Thesis of Prasenjit Karmaker, CS Dept., IISc. 2018
- External Examiner for PhD Thesis of Ajin George Joseph, CS Dept., IISc. 2017
- External Examiner for Phd Thesis of Tejas Bodas, EE Dept., IIT Bombay. April 2016

- Opponent in PhD thesis defence of Pierre Nyquist. Department of Mathematics, KTH Stockholm. 2014
- Chaired the PhD thesis defence committee for V Sasidevan, TIFR. 2014
- External Examiner for PhD thesis of Chandan Pal. Dept. Mathematics, IIT Bombay. 2013
- External Examiner for PhD thesis of Tamal Banerjee. 2013. Dept. Mathematics, IISc Bangalore
- Examiner for PhD thesis Samarth Chandra. 2009. Dept. of Theoretical Physics, TIFR
- External Examiner for PhD thesis of Ozgur Kaya. 2005. Columbia Business School
- External Examiner for PhD thesis of Z. Huang. 2004. Department of Industrial Engineering and Operations Research, Columbia University
- Examiner for PhD thesis of Rahul Jain. 2004. School of Technology and Computer Science, TIFR

Key consultancies and industry interaction

Sep. - Nov. 20	Taught a course on stochastic calculus and math finance to quant associates in Bank of America (BA Continuum), Mumbai
Aug. 19	Taught a course on math finance to quant associates in JP Morgan, Mumbai
Mar. 19	Taught a short course on equity and interest rate financial derivatives to quants at Ernst and Young in Bangalore
Sep – Dec 14 Feb – Apr 16	Taught introductory math finance to quants at Nomura Bank, Mumbai
Aug. 14	Taught Interest Rate Models to quants at Credit-Suisse Bank, Mumbai
Sep 11 – July 12	Capital Metrics and Risk Solutions, Pune, India. Helping in designing a cutting edge portfolio risk measurement product
Aug - Dec 10	Taught introductory math finance to quants at ICICI Bank, Mumbai
July 10	Taught introductory math finance to quants at Morgan Stanley in Mumbai
Apr – Sep 10	Taught cutting edge interest rate models, stochastic volatility based models, credit risk models to the advanced quants at Nomura, Mumbai
June 09	Yahoo Research Lab, Bangalore. Designed algorithms for better estimation of click probabilities of Internet advertisements
Jan – Sep 08	Bank of America. (On leave from TIFR) Vice President, Head Quantitative Analysis for Bank of America Continuum Solutions at Mumbai. Amongst the fifteen members of the executive global quantitative council of Bank of America
October 07	Institute for Financial Management and Research (IFMR), Chennai.

	Taught a short course on Monte Carlo Methods in Finance to industry participants
Jan – April 07	Bank of America. Taught a course on Mathematical Finance to researchers and analysts at Bank of America Continuum Solutions at Mumbai
4/05 – 12/07	General Motors Research, India. In an R&D project, conducted research on modeling procurement auctions for project networks
12/05–6/07	Capital Metrics and Risk Solutions, Pune, India. Equity and financial analytics research firm. Helped develop cutting edge risk analysis and financial models
July 15, 2006	Indian School of Business, Hyderabad. Conducted a workshop on Computational Finance for industry participants
7/99 – 7/02	IBM India Research Lab, Delhi. Conducted research and development in the areas of e-commerce and communications networks
7/00 – 12/02	Delhi Transportation Corporation. Delhi bus traffic demand estimation and DTC bus route rationalization

Ongoing research grants

- Project with WHO, SEARO. Analysis of Potential Impact of Public Health and Social Measures
- Grant by ATE Chandra Foundation to enhance the IISc-TIFR Agent-Based Simulator
- Indo-Swedish Network Grant jointly with Dr. Pierre Nyquist and Prof. Henrik Hult at KTH, Sweden. 2020-22. Large deviations, rare-event simulation and machine learning: Importance sampling using neural networks
- MATRICS grant in Mathematical Sciences by Science and Engineering Research Board (SERB). 2020-22. Designing a Perfect Interview/Exam using Multi-Armed Bandit Methods

Patents awarded

- Distributed bid processing method for open-cry and descending price auctions. With Manish Gupta. Filed February 17, 2000. Awarded July 31, 2007. Number 7,251,630.
- System for optimal resource allocation and planning for hosting computing services. With Johara Shahabuddin; Kannan Balaji; Sanjiv Kapoor; Vishu Gupta; Ajay Chrungoo. Filed January 29, 2001. Awarded April 5, 2005. Number 6,877,035.

- A. Bassamboo, M. Gupta and S. Juneja. An Efficient Winner Determination Technique for Determining Winner Bids in Online Single Item, Multiple Units Auctions. Filed at USPTO.

Internships

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| 6/92 - 9/92 | IBM T.J. Watson Research Center, Yorktown Heights, NY. |
| 6/91 - 9/91 | Summer Intern. Performance Analysis Group, Computer Science Division |
| 6/90 - 9/90 | Bell Labs, Holmdel, NJ. Summer Intern. Operations Research Group |

Outreach interactions

- Popular Talk at Chai and Why event. Online. Covid-19 through the Mathematical Crystal Ball. April 4, 2021.
- City Scale Agent Based Simulators for the study of Covid-19 spread. CovidGyan WebGyan series. (link) June 18, 2020
- Invited by SynTalk (Mumbai, India) as a SynTalkr for #TIAU (The Infrequent And Unlikely, January 12, 2019).
<https://syntalk.wordpress.com/episodes/turn-five/tiau/> (website link)
- Popular Talk at Chai and Why event. Finding certainty in an uncertain world: A tale of tails. Oct. 2, 2016 at Prithvi Theatre.
- Invited to Speak at Mumbai Local, Junoon event on Modeling Uncertainty- A Tale of Tails January 15, 2016 at Kitabkhana, Mumbai
- Op-Ed piece supporting increased government investments in the IITs.
<http://www.indianexpress.com/news/pay-it-forward/514743/>
- Popular talk at Chai and Why event Rocket Science and Ketchup Economics in Finance at Prithvi Theatre. Nov. 1, 2009.

Workshops co-organized

- Workshop on Climate Studies. Hybrid. ICTS Bangalore. March 1-3, 2022
- Program on Advances in Applied Probability 2 (PAAPII), Online ICTS Bangalore, January 4-8, 2021
- Workshop on Learning Theory 2 at TIFR Jan 3-4, 2020
- Program on Advances in Applied Probability (PAAP) at ICTS Bangalore, August 5-17, 2019

- Workshop on Learning Theory at TIFR Jan 2-6, 2019
- Workshop Probability Day at TIFR in January 2018
- Three-day workshop on Applied Probability at TIFR in March 2017
- Two-day workshop on Learning and Related Probabilistic Applications at TIFR in February 2015
- Two-day workshop on Game Theory at TIFR in May 2013
- As part of ICTS, organized a two-week School in Mathematical Finance at TIFR in January 2012
- Member, Organizing Committee, International Colloquium on Perspectives in Fundamental Research, held at TIFR, March 2010
- Workshop on Stochastic Methods: Analysis and Algorithms. At TIFR, September 2009
- Summer School in Financial Mathematics (jointly with Prof. P. G. Babu) at IGIDR, April 2005

Key administrative roles

- Chair of selection committee for RM Tulpule Chair on Global Warming Research at TIFR
- Pan-TIFR Task force chair epidemiology studies, modelling and simulation activities. April 2020 to present
- Dean, School of Technology and Computer Science. Jan 2017 to Sep 2021.
- Chairperson, Faculty Induction and Recruitment Committee. School of Technology and Computer Science, TIFR. (2012 to 2016)
- Subject Board Convener, STCS, TIFR. 2005-06, 2012-13, Sept – Nov. 2016

Covid related reports

- Juneja, S., Mittal, D. 2021. Potential 3rd COVID Wave in Mumbai: Scenario Analysis
- A. Eeshan, S. Juneja, D. Mittal, A. Noolkar, R. Saptharishi, P. Srivastava. Oxygen Planner for States in India STCS. <https://www.tcs.tifr.res.in/>
- Juneja, S., Mittal, D. 2021. Modelling the Second Covid-19 Wave in Mumbai <https://arxiv.org/pdf/2105.02144.pdf>
- Malani, A., Shah, D., Kang, G., Lobo, G.N., Shastri, J., Mohanan, M., Jain, R., Agrawal, S., Juneja, S., Imad, S. and Kolthur-Seetharam, U., 2021. Seroprevalence of SARS-CoV-2 in slums versus non-slums in Mumbai, India. *The Lancet Global Health*, 9(2), pp.e110-e111. ([link](#)) Medrxiv version <https://www.medrxiv.org/content/10.1101/2020.08.27.20182741v1>

- Harsha, P., Juneja, S., Mittal, D. and Saptharishi, R. 2020. COVID-19 Epidemic in Mumbai: Long term projections, full economic opening, and containment zones versus contact tracing and testing. Preprint. (updated_October pdf) <https://arxiv.org/abs/2011.02032> (Early September pdf)
- S. Agrawal, S. Bhandari, A. Bhattacharjee, A. Deo, N. Dixit, P. Harsha, S. Juneja, P. Kesarwani, A. Swamy, P. Patil, N. Rathod, R. Saptharishi, S. Shriram, P. Srivastava, R. Sundaresan, N. K. Vaidhiyan, and S. Yasodharan (2020). City-Scale Agent-Based Simulators for the Study of Non-Pharmaceutical Interventions in the Context of the COVID-19 Epidemic. *Journal of the Indian Institute of Science*, 1-39.
- Mumbai-Serosurvey Technical report-NITI_BMC-Round-2
- Mumbai-Serosurvey Technical report-NITI
- P Harsha, S Juneja, P Patil, N Rathod, R Saptharishi, A. Y. Sarath, S Sriram, P Srivastava, R Sundaresan, N K. Vaidhiyan. 2020. COVID-19 Epidemic Study II: Phased Emergence From the Lockdown in Mumbai. <http://arxiv.org/abs/2006.03375>

Publications

2022

- Juneja, S. 2022. Learning the Queue Arrivals Game Equilibrium. To appear in **Queueing Systems and Applications (QUESTA)**.
- Mittal, D., Juneja., S. and Agrawal, S. 2022. Shift, scale and restart smaller models to estimate larger ones: Agent based simulators in epidemiology. To appear in **Performance Evaluation Review**.

2021

- Moka, S. B., S. Juneja and M. R. H. Mandjes. 2021. Rejection and Importance Sampling based Perfect Simulation for Gibbs Hard Sphere Models. arXiv:1705.00142. **Advances in Applied Probability**, 53(3), pp.839-885.
- Agrawal, S., Juneja, S. and Koolen, W.M., 2021. Regret Minimization in Heavy-Tailed Bandits. **Conference on Learning Theory (COLT) 2021**. 134. Pp. 1-37.
<https://arxiv.org/pdf/2102.03734.pdf>.
- Agrawal, S., Koolen, W.M. and Juneja, S., 2021. Optimal Best-Arm Identification Methods for Tail-Risk Measures. **Advances in Neural Information Processing Systems**, 34.
<https://arxiv.org/abs/2008.07606>
- Malani, A., Shah, D., Kang, G., Lobo, G.N., Shastri, J., Mohanan, M., Jain, R., Agrawal, S., Juneja, S., Imad, S. and Kolthur-Seetharam, U., 2021. Seroprevalence of SARS-CoV-2 in slums versus non-slums in Mumbai, India. **The Lancet Global Health**, 9(2), pp.e110-e111. (link)
Medrxiv version <https://www.medrxiv.org/content/10.1101/2020.08.27.20182741v1>
- Anand Deo, Sandeep Juneja. 2021. Credit Risk: Simple Closed-Form Approximate Maximum Likelihood Estimator. **Operations Research** 69(2):361-379.
<https://doi.org/10.1287/opre.2020.2029>
- Agrawal, S., Juneja, S. and Koolen, W.M., 2021. Regret minimization in risk averse bandits. In 2021 Seventh **Indian Control Conference (ICC)**, pp. 195-200. IEEE, 2021.

2020

- S Agrawal, S Juneja and P Glynn. 2020. Optimal delta-correct best arm selection for heavy-tailed distributions. **Algorithmic Learning Theory (ALT 2020)**. Pp 61-110.
<https://arxiv.org/abs/1908.09094>.
- S. Agrawal, S. Bhandari, A. Bhattacharjee, A. Deo, N. Dixit, P. Harsha, S. Juneja, P. Kesarwani, A. Swamy, P. Patil, N. Rathod, R. Saptharishi, S. Shriram, P. Srivastava, R. Sundaresan, N. K. Vaidhiyan, and S. Yasodharan (2020). City-Scale Agent-Based Simulators

for the Study of Non-Pharmaceutical Interventions in the Context of the COVID-19 Epidemic. **Journal of the Indian Institute of Science**, 1-39. (link)

- Bassamboo, A., Deep, V., Juneja, S., and Zeevi, A. 2020. Discriminative Learning via Adaptive Questioning. <https://arxiv.org/pdf/2004.05442.pdf>

2019

- S Juneja and S Krishnasamy. 2019. Sample complexity of partition identification using multi-armed bandits. **Conference on Learning Theory COLT 2019**: 1824-1852
- A Deo and S Juneja. 2019. Limiting distributional fixed points in systemic risk graph models. Proceedings of **Winter Simulation Conference 2019**. (pp. 878-889). IEEE.
- S Moka, D Kroese and S Juneja. Unbiased estimation of the reciprocal mean for non-negative random variables. Proceedings of **Winter Simulation Conference 2019**. (pp. 404-415) IEEE Press.

2018

- D. Reijnsbergen, P. de Boer, W. Scheinhardt and S. Juneja. 2018. Path-ZVA: general, efficient and automated importance sampling for highly reliable Markovian systems. **ACM Transactions on Modeling and Computer Simulation (TOMACS)**, 28(3), p.22.
- P. Glynn and S. Juneja. 2018. Selecting the best system and multi-armed bandits. <http://arxiv.org/abs/1507.04564>.
- Kavitha, V., Saha, I., & Juneja, S. (2018, December). Random Fixed Points, Limits and Systemic risk. In 2018 IEEE **Conference on Decision and Control (CDC)** (pp. 5813-5819). IEEE.

2017

- Hong, L. J., S. Juneja, and G. Liu. 2017. Kernel smoothing for nested estimation with application to portfolio risk measurement. **Operations Research**. 65, 3, 657-673.
- Juneja, S. 2017. Dynamic Portfolio Credit Risk and Large Deviations. In *Econophysics and Sociophysics: Recent Progress and Future Directions*, pp. 41- 58. Springer, Cham.
- Juneja, S. and N. Shimkin. 2017. On the Computation of Dynamic User Equilibrium in the Multiclass Transient Fluid Queue. **ACM SIGMETRICS Performance Evaluation Review**. 45 (2), 137-142. doi: 10.1145/3199524.3199547
- Moka, S. B., S. Juneja, and M. R. H. 2017. Analysis of Perfect Sampling Methods for Hard-sphere Models. **ACM SIGMETRICS Performance Evaluation Review**. 45 (2), 69-75 doi: 10.1145/3199524.3199536

2016

- A. Agarwal, S. Juneja and R. Sircar. 2016. American Options under Stochastic Volatility: Control Variates, Maturity Randomization & Multiscale Asymptotics. **Quantitative Finance** 16 (1), 17-30.

- S. Juneja and D. Manjunath. 2016. To Lounge or to Queue Up. MAMA'16, **ACM SIGMETRICS 2016**
- Hult, H., Juneja, S., & Murthy, K. (2016). Exact and efficient simulation of tail probabilities of heavy-tailed infinite series. arXiv preprint arXiv:1609.01807.

2015

- S. Foss, S. Juneja, M. Mandjes and S. B. Moka. 2015. Spatial Loss Systems: Exact Simulation and Rare Event Behavior. **ACM SIGMETRICS Performance Evaluation Review** 43 (2), 3-6
- S. Dey, S. Juneja, K. R. A. Murthy. 2015. Incorporating Views on Marginal Distributions in the Calibration of Risk Models. **Operations Research Letters**, 43,1, 2015, 46–51
- S. B. Moka and S. Juneja 2015. Regenerative Simulation for Queueing Networks with Exponential or Heavier Tail Arrival Distributions. **ACM Transactions on Modeling and Computer Simulation (TOMACS)** 25 (4), 1-22.
- A. Agarwal and S. Juneja. 2015. Nearest neighbor based estimation technique for pricing Bermudan options. **International Game Theory Review** Vol. 17, No. 1, 1540002 (31 pages)
- S. Juneja and T. Raheja. 2015. The Concert Queueing Game: Fluid Regime with Random Order Service. **International Game Theory Review**, Vol. 17, No. 2, 1540012 (15 pages)

2014

- K. R. A. Murthy, S. Juneja and J. Blanchet. 2014. State-independent Importance Sampling for Random Walks with Regularly Varying Increments. arXiv:1206.3390v3. **Stochastic Systems**, Issue 2, Volume 4, 321-374.
- J. Hong, S. Juneja and J. Luo. 2014. Estimating Sensitivities of Portfolio Credit Risk using Monte Carlo. **INFORMS Journal of Computing**. <http://dx.doi.org/10.1287/ijoc.2014.0602>; 26, 4, 848 – 865.

2013

- S. Juneja and M. Mandjes. Overlap Problems on the Circle. **Adv. in Appl. Probab.** Volume 45, Number 3 (2013), 773-790.
- A. Agarwal, S. Dey and S. Juneja. Efficient Simulation of Large Deviation Events for Sums of Random Vectors using Saddle Point Representations. **J. Appl. Probab.** Volume 50, Number 3 (2013), 703-720.
- S. Juneja and N. Shimkin. The Concert Queueing Game: Strategic Arrivals with Waiting and Tardiness Costs. **Queueing Systems**. 2013, Volume 74, Issue 4, pp 369-402. DOI 10.1007/s11134-012-9329-3
- P. Glynn and S. Juneja. 2013. Asymptotic Simulation Efficiency based on Large Deviations. **ACM TOMACS** 23, 3, Article No. 20.
- Moka, S. B., Juneja, S. 2013. Regenerative Simulation for Multiclass Open Queueing Networks. In Proceedings of 2013 **Winter Simulation Conference**. IEEE Press. 643-654.

- Agarwal, A., & Juneja, S. 2013. Comparing Optimal Convergence Rate of Stochastic Mesh and Least Squares Method for Bermudan Option Pricing In Proceedings of the 2013 **Winter Simulation Conference**, IEEE Press. 701-712.
- Murthy, K. R., Juneja, S., Blanchet, J. 2013. Optimal Rare Event Monte Carlo for Markov Modulated Regularly Varying Random Walks. In Proceedings of the 2013 **Winter Simulation Conference**, IEEE Press, 564-576.

2012

- S. Juneja, T. Raheja and N. Shimkin. 2012. The Concert Queueing Game with Random Arrival Volume. Sixth International Conference on Performance Evaluation Methodologies and Tools, IEEE (**Valuetools** 2012). 317-325.
- Karhyek R. A. M. and S. Juneja 2012. State-independent Importance Sampling for estimating large deviation probabilities in heavy-tailed random walks. Sixth International Conference on Performance Evaluation Methodologies and Tools, IEEE (**Valuetools** 2012). 127-135.
- Reijsbergen, D.P. and de Boer, P.T. and Scheinhardt, W.R.W. and Juneja, S. (2012) Some advances in importance sampling of reliability models based on zero variance approximation. In: Proceedings of the Ninth International Workshop on Rare Event Simulation, **RESIM** 2012. pp. 30-35.

2011

- S. Asmussen, J. Blanchet, S. Juneja and L. R. Nandayapa. 2011. Efficient simulation of tail probabilities of sums of correlated lognormals, **Annals of Operations Research**, 189, 1, 5-23. DOI 10.1007/s10479-009-0658-5.
- P. W. Glynn and S. Juneja. 2011. Ordinal optimization: A nonparametric framework. Proceedings of **Winter Simulation Conference**. IEEE Press 4062-4069
- S. Dey and S. Juneja. 2011. Efficient estimation of density and probability of large deviations of sum of iid random variables. Proceedings of **Winter Simulation Conference**. IEEE Press 3805 -3816
- S. Juneja. 2011. An Introduction to Financial Mathematics. **Math Unlimited: Essays in Mathematics**. Editors: H.N. Ramaswamy, C.S. Yogananda, R. Sujatha, Science Publishers. 191-223. pdf
- Dirk P. Kroese, Nahum Shimkin, Joseph Kreimer, Sandeep Juneja: Preface. **Annals of Operations Research** 189 (1): 1-3 (2011)

2010

- R. Jain, S. Juneja and N. Shimkin. 2010. The Concert Queueing Problem: To Wait or To Be Late. **Discrete Events Dynamic Systems**, 21, 103-138.
- M. Gordy and S. Juneja. 2010. Nested Simulation in Portfolio Risk Measurement. **Management Science** 56, 10, 1833-1848.

- R. Jain, S. Juneja and N. Shimkin. 2010. Queueing for Timely Service: Equilibrium Analysis and Social Efficiency, **MSOM 2010, SIG Conference**.
- S. Dey and S. Juneja. 2010. Multidimensional Fourier Inversion using Importance Sampling with Applications to Options Pricing. Proceedings of Winter Simulation Conference. IEEE Press. 2801-2809.
- S. Juneja. 2010. Monte Carlo Methods in Finance: An Introductory Tutorial. Proceedings of Winter Simulation Conference. IEEE Press. 95-103.
- M. Gordy and S. Juneja. 2010. Full Monte Carlo simulation of CDO portfolios. Encyclopedia of Quantitative Finance. Ed. Rama Cont, Wiley

2009

- S. Juneja and H. Kalra. 2009. Variance Reduction Techniques for Pricing American Options. Journal of Computational Finance (pdf) 12 (3), 79-102, 2009
- S. Juneja and R. Jain. 2009. The Concert/Cafeteria Queuing Problem: A Game of Arrivals. ICST Fourth International Conference on Performance Evaluation Methodologies and Tools. 10.4108/ICST.VALUETOOLS2009.7624. Received the best paper award.
- J. Hong and S. Juneja. 2009. Estimating the Mean of a Nonlinear Function of a Conditional Expectation. Proceedings of Winter Simulation Conference. IEEE Press 1223-1236.
- S Juneja and L Ramprasath. 2009. Nested Simulation for Portfolio Losses within a Time Horizon. Proceedings of Winter Simulation Conference. IEEE Press. 434-443.

2008

- Bassamboo, S. Juneja and A. Zeevi. 2008. Portfolio Credit Risk with Extremal Dependence' Operations Research, 56, 3, 593-606 (pdf of a draft)
- P. Glasserman and S. Juneja. 2008. Uniformly Efficient Importance Sampling for the Tail Distribution of Sums of Random Variables. Mathematics of Operations Research, 33 (1) 36-50.
- S. Juneja. 2008. Optimizing Portfolio Tail Measures: Asymptotics and Efficient Simulation Optimization, Proceedings of Winter Simulation Conference. IEEE Press. 621-628.
- J. Blanchet, S. Juneja and L. R. Nandayapa. 2008. Efficient Tail Estimation for Sums of Correlated Lognormals. Proceedings of Winter Simulation Conference. IEEE Press. 617-624.
- P. Glynn and S. Juneja. 2008. A Large Deviations View of Asymptotic Efficiency for Simulation Estimators. Proceedings of 2008 Winter Simulation Conference, IEEE Press. 396-406.

2007

- S. Juneja. 2007. Estimating Tail Probabilities of Heavy Tailed Distributions with Asymptotically Zero Relative Error. Queueing Systems, 57, 2-3, 115-127.

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Selected Invited Talks (2003 onwards)

- Stochastic Multi Armed Bandits and Heavy Tails. Stochastic Networks, Applied Probability, and Performance (SNAPP) Seminar Series. Oct 18, 2021
- Shift, Scale and Restart Smaller Models to Estimate Larger Ones: Agent Based Simulators in Epidemiology. University of Mannheim (online). Plenary talk at Monte Carlo Methods and Applications (MCM) 2021. August 16-20, 2021.
- Modelling Covid Spread in a City through Simulations and some Algorithmic Enhancements. Workshop on COVID-19: Data and Modelling. University of Hyderabad. July 9-10, 2021
- Shift, scale and reset smaller models to estimate larger ones: Agent based simulators in epidemiology. 2021 INFORMS Simulation Society Workshop (I-Sim). Online, Penn State University. June 20-23, 2021.
- Shift and Scale Approach to Speed up Epidemiological Agent Based Simulation Models. International Symposium on Computational Operations Research and Algorithmic Game Theory March 29-31, 2021
- Partition identification using multi-armed bandits for heavy-tailed distributions. IEEE SPS Seminar Series on Optimization and Learning. IIT Kanpur, Nov 27, 2020.
- Mumbai Sero Survey: Facts and interpretations. TNQ Janelia India Covid-19 Seminar (jointly with Prof. Kolthur), October 16

- Mumbai Sero Survey: Facts and interpretations. Special TIFR Colloquium, August 7, 2020 (jointly with Prof. Kolthur)
- Partition Identification using Multi-Armed Bandits for Heavy-Tailed Distributions. At Recent Trends in Convex Optimization; Theory, Algorithms and Applications (RTCOTAA-2020). 29th to 31st Oct. 2020 at Department of Mathematics, IIT Patna
- Cross-sectional SARS-CoV2 Sero-surveillance study in Mumbai: Facts and Interpretations. SOLIDARITY II, WHO
- Mumbai Sero Survey presentation to COVID Epi-Modelling Team, Gates Foundation. August 13 (jointly with Prof. Kolthur)
- Partition identification using multi-armed bandits for heavy-tailed distributions. Seminar on Optimization, Variational Analysis and Applications. Speaker and Chief Guest. Institute of Science, BHU. Feb. 2-4, 2020.
- Multi-Armed Bandits. International Conference on Operations Research and Decision Sciences (ICORDS 2019). IIM Vishakhapatnam. Keynote speaker. Dec. 28-30, 2019
- Partition identification using multi-armed bandits for general distributions. Workshop on Statistical Finance. CMI. Dec 19-21, 2019
- Learning Optimal Sequential Decisions using Stochastic Multi-Arm Bandit Methods. Keynote Lecture. CORE 2019. IGIDR PhD. Colloquium, November 5-8, 2019
- Discriminative Learning via Adaptive Questioning. INFORMS Applied Probability Conference. Queensland, Australia. July 3-5, 2019
- Discriminative Learning via Adaptive Questioning. Workshop on Stochastic Systems and Network Algorithms. IIT Bombay. March 22-24, 2019.
- Sample complexity of partition identification using multi-armed bandits with applications to nested Monte Carlo. Keynote speaker in workshop on Advances and challenges in Monte Carlo Methods at The University of Queensland. Nov. 30, 2018.
- Sample complexity of partition identification using multi-armed bandits. Keynote speaker in 51st Annual convention of ORSI and International Conference at IIT Bombay. Dec. 17, 2018.
- Multi Armed Bandits, a short course. Winter School on Stochastic Methods for Uncertainty Quantification and Sensitivity Analysis of Complex Models organized by IFCAM at IISER Kolkata. December 4, 2018.
- Invited talks at INFORMS Annual Meet 2018 on - Optimal Hardness of Questions in Static and Interactive Exams and Partition Identification using Multi-armed Bandit Methods with Applications to Financial Risk
- Partition identification using multi-armed bandit methods with applications to financial portfolio risk. Colloquium at ISYE Stochastics group, Georgia Tech., May 14, 2018.
- Partition identification using pure exploration multi-armed bandits. EE Department, IITM, August 6, 2018
- Partition identification using multi-armed bandit methods with applications to financial portfolio risk. Workshop on Mathematical Finance, July 12-16, 2018 IISER Pune
- Queueing Games: To Wait or to be Late. Colloquium at CEBS, Mumbai. January 18, 2018
- Perfect Sampling for Gibbs Processes with a focus on Hard-sphere Models. At International Symposium on Operations Research and Game Theory: Modeling and Computation. January 9-11, 2018. ISI Delhi
- Financial Credit Risk. Seminar organized by Mechanical Engineering Society (MES) at IITD. Jan 10, 2018
- Dynamic Portfolio Credit Risk: Calibration, Modelling and Analysis. Nineteenth INFORMS Applied Probability Society Conference, July 10-12. At Northwestern University
- Rest in the lounge or directly join the queue. Nineteenth INFORMS Applied Probability Society Conference, July 10-12. At Northwestern University

- Selecting the best population using large deviations and multi-armed bandit methods. At IITB, Seminar at EE Deptt. October 9, 2017
- Portfolio Credit Risk: Simple Closed Form Approximate Maximum Likelihood Estimator and Related Issues. Colloquium at ICTS, Bangalore. September 4, 2017
- Credit Risk: Simple Closed Form Approximate Maximum Likelihood Estimator, comparison and analysis. IGIDR-NESL workshop on Mathematics and Economics, Sept 2, 2017
- Selection of the Best System using large deviations, and multi-arm Bandits. At a program on Large deviation theory in statistical physics: Recent advances and future challenges. At ICTS. August 23, 2017
- Acceptance-rejection and Importance Sampling Methodologies for Perfect Sampling from Gibbs Point Processes. At Ramanujan Math Society Conference. June 25, 2017 Belagavi
- Credit Risk Measurement. At Applications of Mathematics Workshop at IITGN on May 16, 2017
- Rest in the lounge or directly join the queue. 2017 Symposium on Mathematical Programming and Game Theory. ISI Delhi. January 9-11, 2017
- A new approach to calibrating credit risk. Reserve Bank of India. SRU-CAFRAL Seminar. Feb. 22, 2017
- Dynamic Portfolio Risk Measurement. At Conference on Statistical Methods in Finance, at CMI, Dec. 2016.
- Dynamic Portfolio Risk Measurement. At Finance and Stochastics Day 2016, Imperial College, UK, 13 October 2016.
- Modeling Credit Risk. Valedictory address at Workshop on Big data, Economics and Finance, at Presidency College on 26 October 2016
- Rest in Lounge or Wait in Queue. Workshop on Congestion Games. Held at Institute for Mathematical Sciences, National University of Singapore. December 16, 2015
- Strategic arrivals to queues. Keynote speaker at the XIX Annual Conference of Society of Operations Management. Held at IIM Calcutta. December 12, 2015
- Ordinal optimization - Empirical large deviations rate estimators, and multi-armed bandit methods. At Seminaire Bachelier Paris. Held at Henri Poincare Institute. May 29, 2015
- Large deviations, selecting the best population and multi-armed bandit methods. At International Conference on Applied Probability and Computational Methods in Applied Sciences. Held at Shanghai Centre for Mathematics, Fudan University. November 2, 2015
- Ordinal optimization - Empirical large deviations rate estimators, and multi-armed bandit methods. At the workshop Applied Probability Frontiers: Computational and Modeling Challenges. At Banff International Research Station, Canada. June 1, 2015
- Multi Armed Bandit Sampling in Nested Simulation for Financial Portfolio Risk Measurement. Keynote speaker at 4th IIMA International Conference on Advanced Data Analysis, Business Analytics and Intelligence. Held at IIM Ahmedabad. April 11, 2015
- Ordinal optimization and multi-armed bandits, Portfolio risk measurement using multiarmed bandit methods, At NMI conference on Non-convex Optimization for Machine Learning. IIT Bombay. June 15 and 16, 2015
- Large deviations, selecting the best population and multi-armed bandit methods, Department of Mathematics Colloquium, IIT Bombay, October 4, 2015
- Efficient Rare Event Simulation Algorithms for Heavy Tailed Processes, Symposium on Learning, Algorithms and Complexity, January 5-9, 2015, Indian Institute of Science, Bangalore, India
- Optimization in Simulation and Pure Exploration Multi-Armed Bandit Methods. At Workshop on Applied Optimization Models and Computation. January 28-30, 2015. ISI Delhi
- Multi-armed Bandit sampling in Nested Portfolio Risk Measurement. NUS-University of Tokyo Workshop on Quantitative Finance. Sept. 25-26, 2014

- Ordinal Optimization and Multi-armed Bandit Techniques. INFORMS Annual Meet, November 2014 in San Francisco
- Ordinal optimization in simulation and pure exploration multi-armed bandit methods. Conference on Stochastic Analysis and Applications, Dept. of Mathematics, IISc, September, 8 - 11, 2014
- Rare event simulation of heavy tailed random walks - A new approach. Stochastic Networks Conference at CWI Amsterdam, June 23-27, 2014
- Rare event simulation of heavy tailed random walks - A new approach. IIT Guwahati Mathematics Seminar Series. March 25, 2014
- Concert Queue Arrivals Game: An Overview. Seminar at Department of Applied Mathematics, Ecole Polytechnique, Palaiseau Cedex, France, November 14, 2013
- On Concert Queue Arrivals Game: An Overview. Seminar at Mathematics Department, IISc Bangalore, December 18, 2013
- State Independent Important Sampling for Regularly Varying Distributions. INFORMS Annual Meet. October 2013
- Asymptotic Comparison of Popular Approaches to Price Bermudan Options. INFORMS Annual Meet. October 2013
- Rare Event Simulation of Heavy Tailed Random Walks. Colloquium at University of Southern California EE Dept. Oct. 2013
- The Concert Queueing Problem: Processor Sharing Regime. ISI Delhi, International Symposium on Applied Optimization and Game-Theoretic Models January 9-11, 2013
- The Concert/Cafeteria Queueing Game. ICERM, Brown University, November 21, 2012.
- The Concert/Cafeteria Queueing Game. Operations Management Seminar at Sloan School, MIT, November 5, 2012
- Monte Carlo Methods in Finance. ASET Colloquium, TIFR, September 21, 2012
- Computational finance. TCS Innovations Research Lab, Hyderabad, March 20, 2012: Conducted a short course
- Monte Carlo Simulation and Modelling. National Workshop and Training Programme on Differential Equations and Mathematical Modelling at Lady Shri Ram College, Delhi. Feb. 9, 2012. Plenary speaker
- Efficient Estimation of Density and Probability of Large Deviations of Sum of IID Random Variables INFORMS Winter Simulation Conference, Phoenix, Arizona, December 2011
- Ordinal optimization: A nonparametric framework INFORMS Winter Simulation Conference, Phoenix, Arizona, December 2011
- Monte Carlo Methods in Finance, TACTICS Symposium 2011 (Hosted by Tata Consulting Services Research) December 2011
- The Concert Queuing Game with a Finite Homogeneous Population. University of Amsterdam, November 3, 2011
- The Concert/Cafeteria Queuing Game with a Fluid/Finite Population. University of Twente, November 7, 2011
- Multidimensional Fourier Inversion using Importance Sampling in Rare Event Simulation and Finance. The Applied Probability Society Conference, July 2012, Stockholm
- The concert queuing game: Stochastic system with homogeneous users. The Applied Probability Society Conference, July 2012, Stockholm
- The concert queueing game: To wait or to be late University of Bristol, May 20, 2011
- Newton Institute, Cambridge, UK. June 16, 2010. Presented: The concert queueing game: to wait or to be late
- Maxwell Institute for Mathematical Sciences, Heriot Watt University, Edinburgh, September 29, 2010. Presented: Estimating Mean of Non-Linear Function of a Conditional Expectation with Applications to Portfolio Risk Measurement

- Maxwell Institute for Mathematical Sciences, Heriot Watt University, Edinburgh, September 29, 2010. Presented: Concert Queuing Game: To Wait or To be Late
- INFORMS Annual Meeting 2010. Texas Austin. Presented: Entropy Approach for Incorporating Fat-tailed Constraints in Financial Models
- INFORMS Annual Meeting 2010. Texas Austin. Presented: The Concert Queuing Arrivals Game: Finite Customer Analysis
- Stanford University, Operations Research Seminar, November 15, 2010: Presented: The Concert Queuing Game
- IIT Bombay, IEOR Dept., November 4, 2010. Presented: The Concert Queuing Game: To Wait or To be Late
- INFORMS Winter Simulation Conference, Baltimore, Maryland, December 2010. Conducted a tutorial on: Monte Carlo Methods in Finance: An Introductory Tutorial
- INFORMS Winter Simulation Conference, Baltimore, Maryland, December 2010. Presented: Multidimensional Fourier Inversion using Importance Sampling with Application to Option Pricing
- December 19th-22nd, 2010 at Quantitative Finance Workshop at ITM Institute of Financial Markets, Mumbai, INDIA. Presented: Introduction to Financial Mathematics
- Workshop on Financial Mathematics at Dept. of Mathematics, Indian Institute of Science, Bangalore, May 10 -15, 2009. Presented: Computational issues in pricing multi-dimension American and European Options
- Mumbai-Pune Soft Matter meeting, TIFR. June 6, 2009. Presented: Rare Event Analysis and Simulation.
- Applied Probability Conference at Cornell University, July, 2009. Presented:
 - The Concert Queueing Problem: A Game of Arrivals
 - Incorporating views in Mathematical Models using Entropy Approach
 - Simulation Estimation of the Mean of a Non-linear Function of a Conditional Expectation
- Conference on Probability and Stochastic Process at ISI Delhi, Nov. 26-28. Presented: The Concert Queueing Problem: A Game of Arrivals
- CAFRAL-IFMR-IISc-CMI conference on Application of Advanced Computational and Mathematical Methods in Finance held on September 26-27 at Parvathy Hall, IFMR Campus, Chennai. Presented: Advances in Risk Measurement Techniques
- International Conference on Methods and Models in Computer Science held in Jawaharlal Nehru University on Dec. 14, 2009. Presented: Portfolio Risk Measurement
- Winter Simulation Conference at Miami, December, 2008. Presented:
 - Optimizing Portfolio Tail Measures: Asymptotics and Efficient Simulation Optimization
 - A Large Deviations View of Asymptotic Efficiency for Simulation Estimators
- Conference on 'Efficient Monte Carlo: From Variance Reduction to Combinatorial Optimization' held at Sandbjerg Estate, Sønderborg, Denmark 14-18 July 2008. Presented: Nested Simulation in Risk Management
- Colloquium, IIM Bangalore on November 14, 2008. Presented: Extremal Dependence in Portfolio Credit Risk Modeling
- International Conference on Modeling, Computation and Optimization, Indian Statistical Institute, New Delhi, January 09-10, 2008. Presented: Nested Simulation in Portfolio Risk Measurement.
- International Workshop on Rare Event Simulation, The University of Nice, Azura Coast, France, April 30-May 04, 2007. Presented: Simultaneous Estimation of Many Rare Events

- Workshop on Rare Events in Communication Networks, Heriot Watt University, Edinburgh, UK July 02-07. 2007. Presented: Estimating Rare Events Involving Heavy Tailed Random Variables with Asymptotically Zero Relative Error
- INFORMS Applied Probability Conference, EURANDOM, The Netherlands, July 09-11, 2007. Presented:
 - Uniformly Efficient Importance Sampling for the Tail Distribution of Sums of Random Variables
 - Minimizing Tail Probabilities: Asymptotic Analysis and Efficient Simulation optimization
- International Conference on Stochastic Processes and Applications, Indian Institute of Science, Bangalore, July 16-21, 2007. Presented: Simultaneous Estimation of Many Rare Events
- Conducted a short course on Computational Finance for the industry participants at the Indian School of Business, July 2006
- Winter Simulation Conference at Monterey, California, December 3-6, 2006. Presented: Efficient Simulation Techniques for Portfolio of CDOs.
- Gave a tutorial at the Tenth Annual Society for Operations Management Conference held at IIM Ahmadabad, December 21-23, 2006. Presented: Introduction to Monte Carlo methods
- Delivered the First Perwez Shahabuddin Memorial Lecture held at IIT Delhi, February 27, 2006. Presented: Rare Event Simulation
- Gave series of lectures on Monte Carlo Methods in a Summer School on Mathematical Finance held at IGIDR, Mumbai. April 2005
- Winter Simulation Conference at Orlando, Florida, December 7-9, 2005. Presented: Function-Approximation-based Control Variates for Pricing American Options
- Summer Research Conference at the Indian School of Business, Hyderabad, August 7-9, 2005. Presented: Portfolio Credit Risk under Extremal Dependence
- Symposium on Current Topics in Operations Research, November 12, 2005. Organized by IEOR Department in IIT Bombay. Presented: Monte Carlo Methods in Finance
- Winter Simulation Conference at Washington D. C. December 4-6, 2004. Presented:
 - Function-Approximation-based Importance Sampling for Pricing American Options
 - A Large Deviations Perspective on Ordinal Optimization
- Workshop on Monte Carlo Methods, Coorg, Nov. 28-Dec. 3, 2004. Presented a series of lectures on Importance Sampling
- Society of Mathematical Sciences Annual Meeting 2004. Held in October 11, 2004 in Delhi University. Presented: Monte Carlo Methods in Finance
- INFORMS (Institute for Operations Research and Management Sciences Annual meet 2003) at Atlanta October 19-22, 2003. Presented:
 - Adaptive Importance Sampling for Markov Chains using Stochastic Approximation
 - Optimizing QoS of Composite Web Services modeled as PERT Networks
- Sixth International Conference of the Association of Asia Pacific Operations Research Society, December 2003 in Delhi. Presented:
 - Selecting the best design amongst many alternatives via simulation using large deviations theory
 - Adaptive Importance Sampling for Markov Chains
- International Conference on Operations Research with Economic and Industrial Applications 2004. Presented: Computationally Efficient Winner Determination Techniques for Internet Multi-Unit Auctions.
- Workshop on Applied Probability. Held on April 18, 2003 at TIFR. Presented: A large deviations perspective on ordinal optimization.

