

BIO-DATA

1. Name and full correspondence address: Abhijit Datta Banik
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Department of Mathematics,
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Indian Institute of Technology Bhubaneswar,
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3. Institution: Indian Institute of Technology Bhubaneswar

4. Date of Birth: 25th December, 1977

5. Gender (M/F/T): M

6. Category Gen/SC/ST/OBC: Gen

7. Whether differently abled (Yes/No): No

8. Academic Qualification (Undergraduate Onwards):

	Degree	Year	Subject	University/Institution	Class/Division
1.	B.Sc.	1998	Mathematics (Hons)	Jadavpur University, Kolkata	1st
2.	M.Sc.	2000	Mathematics	Jadavpur University, Kolkata	1st
3.	Ph.D.	2007	Statistics and Operations Research	Indian Institute of Technology, Kharagpur	-

9. Ph.D thesis title, Guide's Name, Institute/Organization/University, Year of Award:
My Ph. D. thesis was entitled "Analysis of vacation and non-vacation queues under Markovian arrival/service process" under the supervision of Professor Umesh Chandra Gupta, Department of Mathematics, Indian Institute of Technology, Kharagpur -721302, India and the degree was awarded in the year 2007.

10. Work experience (in chronological order).

S.No.	Position held	Name of the Institute	From	To	Pay Scale
1.	Assistant Professor	Indian Institute of Technology Bhubaneswar	December, 2009	October, 2022	13A2, Grade 1 Assistant Professor (13A2)
2.	Post-Doctoral Position	Center for Mathematics and its Applications (CEMAT), IST, Lisboa, Portugal	May, 2012	July, 2012	1495 euros per month
3.	Post-Doctoral Position	Center for Mathematics and its Applications (CEMAT), IST, Lisboa, Portugal	May, 2010	July, 2010	1495 euros per month
4.	Visiting Fellow	School of Technology and Computer Science, Tata Institute of Fundamental Research, Mumbai, India	January, 2008	September, 2009	Rs 17,000 per month
5.	Post-Doctoral Position	INRIA (IRISA), Campus Universitaire De Beaulieu F-35042 Rennes, Cedex France	December, 2006	August, 2007	1893 euros per month
6.	Senior Research Fellow (SRF)	Indian Institute of Technology, Kharagpur	July, 2004	November, 2006	Rs 9,000 per month
7.	Junior Research Fellow (SRF)	Indian Institute of Technology, Kharagpur	July, 2002	June, 2004	Rs 8,000 per month

11. Professional Recognition/ Award/ Prize/ Certificate, Fellowship received by the applicant.

S.No	Name of Award	Awarding Agency	Year
1.	UGC-CSIR NET in CSIR Junior Research Fellowship (JRF) category	UGC, CSIR, New Delhi, India	2001
2.	INRIA, France Post-Doctoral Fellowship	INRIA(IRISA), Rennes, France	2006

3.	FCT, Portugal, Post-Doctoral fellowship	Foundation for Science and Technology (FCT), Lisbon, Portugal	2009
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12. Publications (*List of papers published in SCI Journals, in year wise descending order*).

S.N.	Author (in same order as in publication)	Full Title of the Journal	Journal	Year	Vol	Page	doi	Impact Factor
1	Abhijit Datta Banik, Mohan Chaudhry, Sitaram Barik, Gagandeep Singh	On the Heuristic Computational Procedures of the Virtual Waiting-Time Distribution in a Non-renewal Input Finite-Buffer Bulk-Service Queues: MAP/R(a,b)/1/N	Journal of the Indian Society for Probability and Statistics	2025	26	585-630	https://doi.org/10.1007/s41096-025-00232-0	0.6
2	Mohan Chaudhry, AD Banik, Soumyajit Dev, Sitaram Barik	A simple derivation of the waiting-time distribution (in the queue) for the bulk-service queueing system	Annals of operations research	2025	352	1-24	https://doi.org/10.1007/s10479-025-06765-8	4.5
3	Sitaram Barik, Abhijit Datta Banik, Mohan L Chaudhry, Saroja Kumar Singh	Computational Procedure for System Length and Waiting-time Distribution in an Queue:	Indian Journal of Pure and Applied Mathematics	2025	56	973-988	https://doi.org/10.1007/s13226-025-00814-5	0.5
4	Barik S, Down DG, Banik AD	On the Queueing Time Analysis for State-Dependent Fixed-Cycle Traffic Light Queues	Contemporary Mathematics (Singapore)	2025	6	3846 - 5367	https://doi.org/10.37256/cm.6420255958	2.5
5	Saroja Kumar Singh,	Classical and Bayesian estimations of	Communications in Statistics-	2024	53	3517 - 3546	https://doi.org/10.1080/03610926.2	0.8

	Frederico RB Cruz, Eriky S Gomes, Abhijit Datta Banik	performance measures in a single server Markovian queueing system based on arrivals during service times	Theory and Methods				022.2155789	
6	Mohan Chaudhry, Abhijit Datta Banik, Sitaram Barik, Veena Goswami	A novel computational procedure for the waiting-time distribution (in the queue) for bulk-service finite-buffer queues with poisson input	Mathematics (MDPI)	2023	11	1142	https://doi.org/10.3390/math11051142	2.2
7	Veena Goswami, Mohan Chaudhry, Abhijit Datta Banik	Sojourn-time Distribution for Queue with Batch Service of Fixed Size - Revisited	Methodology and Computing in Applied Probability	2022	24	2897 - 2912	https://doi.org/10.1007/s11009-022-09963-0	1.0
8	James J Kim, Douglas G Down, Mohan Chaudhry, Abhijit Datta Banik	Difference equations approach for multi-server queueing models with removable servers	Methodology and Computing in Applied Probability	2022	24	1297 - 1321	https://doi.org/10.1007/s11009-021-09848-8	1.0
9	Souvik Ghosh, Abhijit Datta Banik, Joris Walraevens, Herwig Bruneel	A detailed note on the finite-buffer queueing system with correlated batch-arrivals and batch-size-/phase-dependent bulk-service	4OR	2022	20	241-272	https://doi.org/10.1007/s10288-021-00478-x	2.6
10	AD Banik, MLCh	A simple and efficient computing procedure of	Computers & Operations Research	2022	138	13	https://doi.org/10.1016/j.cor.2021.105564	4.3

	audhry, SWitte, vronge, l, H, Bruneel	the stationary system-length distributions for GIX/D/c and BMAP/D/c queues						
11	JJ Kim, ML Chaudhry, VGoswami, AD Banik	A New and Pragmatic Approach to the GIX/Geo/c/NQ queues Using Roots	Methodology and Computing in Applied Probability	2021	23	273--289	https://doi.org/10.1007/s11009-021-09868-4	1.0
12	Rajesh Kumar, Souvik Ghosh, Abhijit Datta Banik	Numerical study on transient behaviour of finite bulk arrival or service queues with multiple working vacations	International Journal of Mathematics in Operational Research	2021	18	384-403	https://doi.org/10.1504/IJMOR.2021.113586	1.67
13	F Avram, AD Banik, & A Horvath	Ruin probabilities by Padé's method: simple moments based mixed exponential approximations (Renyi, De Vylder, Cramér-Lundberg), and high precision approximations with both light and heavy tails	European Actuarial Journal	2019	9	273--299	https://doi.org/10.1007/s13385-018-0180-8	1.6
14	AD Banik, S Ghosh	Efficient computational analysis of non-exhaustive service vacation queues: BMAP/R/1/N(∞) under gated-limited discipline	Applied Mathematical Modelling	2019	68	540--562	https://doi.org/10.1016/j.apm.2018.11.040	4.4
15	Abhijit Datta Banik, Souvik Ghosh, & M. L. Chaudhry	On the optimal control of loss probability and profit in a GI/C-BMSP/1/N queueing system	OPSEARCH	2019	xx	xx	https://doi.org/10.1007/s12597-019-00409-9	1.8
16	Mohan L. Chaudhry, James	Analytically Simple and Computationally Efficient Results for the GIX/Geo/c	Journal of Probability and Statistics	2019	2019	18 pages	https://doi.org/10.1155/2019/6480139	1.3

	J. Kim, and Abhijit D. Banik	Queues						
17	Gopinath Panda, Abhijit Datta Banik & Dibyajyoti Guha	Stationary Analysis and Optimal Control Under Multiple Working Vacation Policy in a GI/M(a,b)/1 Queue	Journal of Systems Science and Complexity	2018	31	1003 – 1023	https://doi.org/10.1007/s11424-017-6172-y	2.8
18	Dibyajyoti Guha, Veena Goswami, and A.D. Banik	A Study of Equilibrium Joining and Socially Optimal Strategic Behavior in Discrete-Time GI[x]/Geo/1 Queue with Multiple Working Vacations	Queueing Models and Service Management	2018	1	17--30	http://140.120.7.175/index.php/QMSM/article/view/41	0
19	Souvik Ghosh & A. D. Banik	Computing conditional sojourn time of a randomly chosen tagged customer in a BMAP/MSP/1 queue under random order service discipline	Annals of Operations Research	2018	261	185–206	https://doi.org/10.1007/s10479-017-2534-z	4.5
20	A. D. Banik, M. L. Chaudhry, and James J. Kim	A Note on the Waiting-Time Distribution in an Infinite-Buffer GI ^X /C-MSP/1 Queueing System	Journal of Probability and Statistics	2019	2019	10pages	https://doi.org/10.1155/2018/7462439	1.3
21	Gopinath Panda, AD Banik, and ML Chaudhry	Stationary distributions of the R ^X /R/1 cross-correlated queue	Communications in Statistics-Theory and Methods	2017	46	8666--8689	https://doi.org/10.1080/03610926.2016.1186192	0.8
22	Mohan L Chaudhry, Abhijit Datta Banik, Antóni o Pacheco	A simple analysis of the batch arrival queue with infinite-buffer and Markovian service process using roots method: GI ^X /C-MSP/1/∞	Annals of Operations Research	2017	252	135--173	https://doi.org/10.1007/s10479-015-2026-y	4.5
23	Souvik	An algorithmic	Computers &	2017	79	1-11	https://doi.org/10.1016/j.cor.2016.10.00	4.3

	Ghosh and Abhijit Datta Banik	analysis of the BMAP/MSP/1 generalized processor-sharing queue	Operations Research				1	
24	A. D. Banik	Stationary analysis of a BMAP/R/1 queue with R-type multiple working vacations	Communications in Statistics - Simulation and Computation	2017	46	1035--1061	https://doi.org/10.1080/03610918.2014.990096	0.8
25	Gopinath Panda, Veena Goswami, and Abhijit Datta Banik	Equilibrium behaviour and social optimization in Markovian queues with impatient customers and variant of working vacations	RAIRO Operations Research	2017	51	685--707	https://doi.org/10.1051/ro/2016056	2.1
26	Abhijit Datta Banik and ML Chaudhry	Efficient Computational Analysis of Stationary Probabilities for the Queueing System BMAP/G/1/N With or Without Vacation(s)	INFORMS Journal on Computing	2016	29	140--151	https://doi.org/10.1287/ijoc.2016.0720	2.1
27	Gopinath Panda, Veena Goswami, and Abhijit Datta Banik	Equilibrium and socially optimal balking strategies in Markovian queues with vacations and sequential abandonment	Asia-Pacific Journal of Operational Research	2016	33	34 pages	https://doi.org/10.1142/S0217595916500366	1.0
28	ML Chaudhry, Abhijit Datta Banik, Antóni Pacheco, and Souvik Ghosh	A simple analysis of system characteristics in the batch service queue with infinite-buffer and Markovian service process using the roots method: GI/C-MSP (a, b)/1/∞	RAIRO Operations Research	2016	50	519--551	https://doi.org/10.1051/ro/2015035	2.1
29	Dibyayoti Guha, Veena Goswami, and AD Banik	Algorithmic computation of steady-state probabilities in an almost observable GI/M/c queue with or without vacations under state dependent	Applied Mathematical Modelling	2016	40	4199--4219	https://doi.org/10.1016/j.apm.2015.11.018	4.4

		balking and renegeing						
30	Gopinath Panda, Veena Goswami, Abhijit Datta Banik, and Dibyajyoti Guha	EQUILIBRIUM BALKING STRATEGIES IN RENEWAL INPUT QUEUE WITH BERNOULLI-SCHEDULE CONTROLLED VACATION AND VACATION INTERRUPTION	Journal of Industrial and Management Optimization	2016	12	851–878	doi:10.3934/jimo.2016.12.851	1.6
31	A. D. Banik	Single server queues with a batch Markovian arrival process and bulk renewal or non-renewal service	Journal of Systems Science and Systems Engineering	2015	24	337–363	https://doi.org/10.1007/s11518-015-5268-y	1.079
32	A. D. Banik	Some aspects of stationary characteristics and optimal control of the BMAP/G – G/1/N(∞) oscillating queueing system	Applied Stochastic Models in Business and Industry	2015	31	204–230	https://doi.org/10.1002/asmb.2025	1.124
33	Dibyajyoti Guha, Veena Goswami, and A.D.Banik	Equilibrium balking strategies in renewal input batch arrival queues with multiple and single working vacation	Performance evaluation	2015	94	1-24	https://doi.org/10.1016/j.peva.2015.09.001	0.8
34	Dibyajyoti Guha and Abhijit Datta Banik	On the renewal input batch-arrival queue under single and multiple working vacation policy with application to epon	INFOR: Information Systems and Operational Research	2013	51	175--191	https://doi.org/10.3138/infor.51.4.175	1.6
35	Abhijit Datta Banik	Stationary distributions and optimal control of queues with batch Markovian arrival process under multiple adaptive vacations	Computers & Industrial Engineering	2013	65	455--465	https://doi.org/10.1016/j.cie.2013.04.005	6.5
36	A. D. Banik	Analysis of queue-length dependent vacations and P-limited service in BMAP/G/1/N systems: stationary distributions and optimal control	International Journal of Stochastic Analysis	2013	2013	14 pages	https://doi.org/10.1155/2013/196372	0

37	Abhijit Datta Banik	Analyzing state-dependent arrival in GI/BMSP/1/∞ queues	Mathematical and Computer Modelling	2011	53	1229-1246	https://doi.org/10.1016/j.mcm.2010.12.007	1.8
38	A. D. Banik	Analysis of single working vacation in GI/M/1/N and GI/M/1/∞ queueing systems	International Journal of Operational Research	2010	7	314--333	https://doi.org/10.1504/IJOR.2010.032111	0
39	Abhijit Datta Banik	Queueing analysis and optimal control of BMAP/G (a, b)/1/N and BMAP/MSP (a, b)/1/N systems	Computers & Industrial Engineering	2009	57	748--761	https://doi.org/10.1016/j.cie.2009.02.002	6.5
40	A. D. Banik	The infinite-buffer single server queue with a variant of multiple vacation policy and batch Markovian arrival process	Applied Mathematical Modelling	2009	33	3025--3039	https://doi.org/10.1016/j.apm.2008.10.021	4.4
41	AD Banik, UC Gupta, and ML Chaudhry	Finite-buffer bulk service queue under Markovian service process: GI/MSP (a, b)/1/N	Stochastic Analysis and Applications	2009	27	500--522	https://doi.org/10.1080/07362990902844157	0.7
42	Karabi Sikdar, Umesh Chandra Gupta, and Abhijit Datta Banik	Performance analysis of a finite-buffer batch service queue with general input and exponential multiple vacations	Journal of Probability and Statistical Science	2009	7	191--210.	xx	0
43	AD Banik, ML Chaudhry, and UC Gupta	On the finite buffer queue with renewal input and batch Markovian service process: GI/BMSP/1/N	Methodology and Computing in Applied Probability	2008	10	559--575	https://doi.org/10.1007/s11009-007-9064-0	1.0
44	AD Banik and UC Gupta	Finite buffer vacation queue under E-limited with limit variation service and batch Markovian arrival process	Quality Technology & Quantitative Management	2008	5	1-20	https://doi.org/10.1080/16843703.2008.11673172	3.0
45	AD Banik, UC Gupta, and SS Pathak	On the GI/M/1/N queue with multiple working vacations—analytic analysis and computation	Applied Mathematical Modelling	2007	31	1701-1710	https://doi.org/10.1016/j.apm.2006.05.010	4.4

46	AD Banik and UC Gupta	Analyzing the finite buffer batch arrival queue under Markovian service process: $GI^X/MSP/1/N$	TOP	2007	15	146--160	https://doi.org/10.1007/s11750-007-0007-2	1.4
47	U.C.Gupta and A.D.Banik	Complete analysis of finite and infinite buffer $GI/MSP/1$ queue— A computational approach	Operations Research Letters	2007	35	273--280	https://doi.org/10.1016/j.orl.2006.02.003	1.03
48	AD Banik, UC Gupta, and SS Pathak	BMAP/G/1/N queue with vacations and limited service discipline	Applied Mathematics and Computation	2006	180	707--721	https://doi.org/10.1016/j.amc.2006.01.006	3.4
49	AD Banik, UC Gupta, and SS Pathak	Finite buffer vacation models under E-limited with limit variation service and Markovian arrival process	Operations Research Letters	2006	34	539--547	https://doi.org/10.1016/j.orl.2005.08.006	1.03
50	U. C. Gupta, A. D. Banik, and S. S. Pathak	Complete analysis of MAP/G/1/N queue with single (multiple) vacation(s) under limited service discipline	International Journal of Stochastic Analysis	2005	2005	21 pages	https://doi.org/10.1155/JAMSA.2005.353	0

13. LIST OF PUBLICATIONS : BOOK CHAPTERS

S.N.	Author(s)	Chapter Title	Book/Monograph Title	Editor	Publisher	Year
1	Abhijit Datta Banik, Mohan L Chaudhry, Sabine Wittevrongel, Herwig Bruneel	A Short Note on the System-Length Distribution in a Finite-Buffer – $GI^X/MSP/1/N$ Queue Using Roots	Performance Engineering and Stochastic Modeling	Paolo Ballarini, Hind Castel, Ioannis Dimitriou, Mauro Iacono, TuanPhung-Duc, Joris Walraevens	Springer Nature Switzerland	2021
2	A. D. Banik, Souvik Ghosh, and M. L. Chaudhry	On the Consecutive Customer Loss Probabilities in a Finite-Buffer Renewal Batch Input Queue with Different Batch Acceptance/Rejection Strategies Under Non-renewal Service	Soft Computing for Problem Solving	Bansal J., Das K., Nagar A., Deep K., Ojha A.	Springer, Singapore	2019

		(Selected as a best paper in the international conference SocPros 2017)				
3	Gopinath Panda, A. D. Banik, and M. L. Chaudhry	Computational Analysis of the GI/G/1 Risk Process Using Roots (selected as the best theoretical paper in the international conference frontiers in optimization: Theory and Applications, FOTA 2016)	Operations Research and Optimization: FOTA 2016, Kolkata, India, November 24-26	Kar S., Maulik U., Li X.	Springer, Singapore	2018
4	AD Banik, Souvik Ghosh, and Debasis Basu	Computational Analysis of a Single Server Queue with Batch Markovian Arrival and Exponential Single Working	Operations Research and Optimization: FOTA 2016, Kolkata, India, November 24-26	Kar S., Maulik U., Li X.	Springer, Singapore	2018
5	Gopinath Panda, AD Banik, and ML Chaudhry	Inverting the transforms arising in the GI/M/1 risk process using roots	Mathematics and Computing 2013 International Conference in Haldia, India	Ram N. Mohapatra Debasis Giri P. K. Saxena P. D. Srivastava	Springer India	2014

14. LIST OF PEER REVIEWED PUBLICATIONS IN CONFERENCE PROCEEDINGS (in Reverse Chronology - Latest First)

- 1 D Guha, AD Banik, V Goswami, S Ghosh, 2014. Equilibrium Balking Strategy in an Unobservable GI/M/c Queue with Customers' Impatience. **Distributed Computing and Internet Technology, LNCS, 188-199. [Publisher: Springer]**
- 2 Gopinath Panda, Veena Goswami, A D Banik, 2015. Equilibrium abandonment strategies in a cloud management system (CMS): A queueing approach, **Presented in Stochastic Models of Manufacturing and Service Operations, Volos, Greece, June 1-6, 2015 and included in the conference proceedings [Publisher: University of Thessaly Press]**
- 3 AD Banik and SK Samanta, 2013. Controlling Packet Loss of Bursty and Correlated Traffics in a Variant of Multiple Vacation Policy. **Distributed Computing and Internet Technology, LNCS, 208-219. [Publisher: Springer]**
- 4 A. D. Banik, U. C. Gupta and M. L. Chaudhry, 2007. Finite-buffer bulk service queue under Markovian service process. (ACM International Conference Proceeding Series; Vol. 321) **Proceedings of the 2nd international conference on Performance evaluation methodologies and tools, Valuetools 2007, October 23-25, 2007, Nantes, France.**
- 5 V. S. Borkar, D. J. Das, A. D. Banik and D. Manjunath, 2008. A learning scheme for stationary probabilities of large Markov chains with examples. **Proceedings of the Forty-Sixth Annual Allerton Conference, September 23-26, 2008, University of Illinois at Urbana-Champaign, IL, USA.**

15. RESEARCH GUIDANCE

Degree Guidance	Number Completed	Number in Progress
M.Sc/M.Tech/ME/MS/M.Phil.	Single+Joint, Twelve	nil
Doctoral (Ph. D.)	Single, Four	Two

16. Professional Experience

Post-Doctoral visitor at IST, Lisbon, Portugal two times (2010, 2012) with a total duration of six and a half months

Post-Doctoral visitor at School of Technology and Computer Science of Tata Institute of Fundamental Research, Mumbai, India since 1st January 2008 till September 2009.

Post-Doctoral visitor at INRIA (IRISA), Campus Universitaire De Beaulieu F-35042 Rennes, Cedex France since 18 December, 2006 to 31 July, 2007.

Full time teaching experience at Indian Institute of Technology, Bhubaneswar since January, 2010 to present.

Tutorial classes/Lab sessions of B.Tech. students of IIT, Kharagpur during Ph. D.

17. Personal Achievements

2022 Obtained a project entitled `` Development of computational method for finding the exact results on the queueing models involving heavy-tail distributions using complex analysis.`` from DST, New Delhi, India

2013 Obtained (presently completed) a project entitled `` Development of computational methods for stochastic models with Markovian arrival/service process and their applications`` from DST, New Delhi, India

2009 Obtained FCT (Fundação para a Ciência e a Tecnologia), Portugal Post-Doctoral fellowship for one year

2007 Obtained INRIA, Rennes (IRISA) one year Post-Doctoral fellowship

2001 Qualified National Eligibility Test (**NET**) 1st July, 2001 in CSIR Junior Research Fellowship (JRF) category for pursuing Research/Ph. D. in the field of Mathematical Sciences as well as eligible to appear as a candidate for Lecturer to UGC or State Government approved Degree colleges

Courses Taught at IIT, Bhubaneswar

Under Graduate Mathematics-I,-II, Transform Calculus, Probability and Statistics, Stochastic Process Simulation, Queueing Theory in Computer Science

18. Computer Skills

Operating systems: Windows and Linux
Programming languages: Fortran 77, C and C++.
Software Uses: Mathematica, Matlab, Maple

19. Personal Information

Nationality: Indian
Marital Status: Married
Language: English, Bengali and Hindi
Hobbies: Traveling, Playing indoor and outdoor games
Personality Traits: Creative, Determined & Consistent

20. REFERENCES

1. Dr. Umesh Chandra Gupta

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Indian Institute of Technology, Kharagpur-721302 India
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2. Dr. Mohan Chaudhry

Retired Professor
Department of Mathematics and Computer Science
Royal Military College of Canada
PO Box 17000, Station "Forces"
Kingston, Ontario K7K 7B4 Canada
E-mail: Mohan.Chaudhry@rmc-cmr.ca

3. Dr. Sant Sharan Pathak

Retired Professor
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Dated: 28th May, 2026

Abhijit Datta Banik

Signature

(Abhijit Datta Banik)