

CURRICULUM VITAE



Dr. RASHMI SINGH

Assistant Professor (Operations & Analytics)
D-23, Old D quarter, IIT (ISM) Dhanbad,
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Academic Qualification:

- **Doctor of Philosophy (PhD):** Indian Institute of Science (IISc), Bangalore from Faculty of Engineering (2017).
- **Master of Science in Engineering (MSc. (Engg)):** Indian Institute of Science (IISc), Bangalore from Faculty of Engineering with CGPA: 6.4/8.0).
- **Bachelor of Engineering (Electronics & Communication):** Birla Institute of Technology (BIT) Mesra Ranchi (2009) (Marks: 86%).
- **Xth (2002) & XIIth (2004)** from **CBSE board**, Kendriya Vidyalaya School Janakpuri, New Delhi with First Class.

Doctoral Research Details:

Research Area: Scheduling in Semiconductor Manufacturing Industries.

Title: Investigation of Existing Release Policies & Development of a Few Efficient Release Policies for Wafer Fabrication System – **A Simulation Approach.**

Advisor: Prof. M. Mathirajan

Research and Teaching Interests:

Operations Research
Machine Learning
Applied Business Statistics

Simulation and Modeling
 Data Mining for Business
 Optimization Techniques
 Scheduling in Manufacturing
 Operation Management
 Production Planning and Control in Manufacturing Industry

Teaching Experiences:

S.No .	Positions Held	Name of the Institute	From	To	Subjects Taught
1.	Assistant Professor	Indian Institute of Technology (ISM) Dhanbad	18/11/19	present	Operations Research, Machine Learning, Data Mining for Business, and Industrial Management, Simulation and Modeling Analysis (Lab), and Business Research Methods.
2.	Assistant Professor	Indian Institute of Management Jammu (IIMJ)	09/05/19	15/11/19	Quantitative Techniques I (QT-I) and Quantitative Techniques II (QT-II)
3.	Research Associate	Indian Institute of Science (IISc) Bangalore	01/08/16	01/08/17	Operations research, simulation, waiting line theory, aggregate production planning, master production schedule and scheduling & sequencing

List of Publications in Reputed Journal

First Author	Authors	Title	Journal	Volume	Issue	Page No.	Year	Impact Factor	DOI
Madhu Kumari	Rashmi Singh & V.B. Singh	Prioritization of Software Bugs Using Entropy-Based Measures” in “Journal of Software: Evolution and Process	<i>Journal of Software: Evolution and Process</i>				2024	1.7	https://doi.org/10.1002/smr.2742
Sumita Biswas	Rashmi Singh & Niladri Das	A new paradigm for assessing the relationship between indigenous wellbeing and	<i>Social Indicators Research</i>				2024	2.8	https://doi.org/10.1007/s11205-

		health: A meta-analytical study of critical factors in a global context							024-03446-0
Abhinav Karthikeyan Ravichandran	Rashmi Singh	Investigating the potential domino effect of a dazzling fiscal-period on CSR performance: a luxury brand scenario	<i>International Journal of Corporate Social Responsibility</i>	9	13		2024	4.3	https://doi.org/10.1186/s40991-024-00092-0
Rashmi Singh	M Mathirajan	Simulation modeling techniques for managing epidemic outbreak: a review, classification schemes, and meta-analysis	<i>Journal of Simulation</i>	17	6	709-728	2023	2.205	10.1080/17477778.2022.2067012
Rashmi Singh	M Mathirajan	A New Stage-Wise Control Release Policy for Semiconductor Wafer Fabrication Systems	<i>IEEE Transactions on Semiconductor Manufacturing</i>	34	1	115-134	2021	2.874	10.1109/TSMT.2020.3042856
Rashmi Singh	M Mathirajan	Investigation of Different Inputs and A New Release Policy in Proposed Simulation Model for Wafer Fabrication System	<i>Sadhana</i>	44	2	41(1-19)	2019	1.188	https://www.ias.ac.in/article/fulltext/sadh/044/02/0041
Rashmi Singh	M Mathirajan	Experimental Investigation for Performance Assessment of Scheduling Policies in Semiconductor	<i>International Journal of Advanced Manufacturing Technology</i>	99	5-8	1503-1520	2018	3.266	https://link.springer.com/article/10.1007

		Wafer Fabrication – A Simulation Approach							%2Fs00170-018-2414-y
Mahama ya Mohanty	Rashmi Singh and Ravi Shankar	Improving the Operational Efficiency of Outbound Retail Logistics Using Clustering of Retailers and Consumers	<i>Journal of Modelling in Management</i>	13	3	646-674	2018	1.86	https://doi.org/10.1108/JM2-12-2016-0137

Key Projects

Principal Investigator for the following projects:

- **Principal Investigator (PI):** “Development of Strategic Interventions through Innovative Techniques to Promote STEM Education among underprivileged students with special emphasis on PAP (Project Affected Person) students in Dhanbad” funded by the **Bharat Coking Coal Limited (BCCL)** for six months (**20th August 2024 – 20th February 2025**) with the amount of **Rs. 9,99,900** & current status: **Ongoing**. Project Id: **BCCL/2024-2025/1117/MSIE**.
- **Principal Investigator (PI):** “Capacity Building Training Programme on Basic Level and Advanced Level Information Technology and Computer Training for Tribals in Jharkhand” under **Center of Excellence (CoE) Scheme** funded by the **Ministry of Tribal Affairs (MOTA)** for four years (**April 2023 – April 2027**) with the amount of **Rs. 1,92, 47,184 Lakhs (1.92 Crore)** & current status: **Ongoing**. Project Id: **MOTA (CoE)/2023-24/04/MSIE-01**.
- “High-End Workshop on Stochastic Modeling Technique” under **Accelerate Vigyan Scheme** announced by the **Science and Engineering Research Board (SERB), DST, GoI**. Approved by the funding agency (**SERB**) for three months (**December 2022 - February 2023**) with the amount of **Rs. 5 Lakhs** & current status: **Completed**. Project Id: **DST (SERB) (WORKSHOP)/2022-2023/18/MS**.
- “Improving the Economic Well-Being of Scheduled Tribe Communities (ST) Using Game Theoretic and Operations Research Techniques in Jamtara District of Jharkhand State”, under the **Science Technology & Innovation Hubs for the development of SC/ST communities from Science for Equity Empowerment and Development (SEED) Division of Department of Science & Technology, GoI**. Approved by the funding agency (**SEED**), **DST, GoI**, for three years (**February 2022-February 2025**) with the sanctioned amount of **Rs. 60.75**

Lakhs & current status: Ongoing. Project Id: **DST (SEED) (317)/2021-2022/869/MS.**

- “Motivate School Students and Teachers Concerning the Relevance of Science and Technology through Innovative Communication Techniques” under the **STEM scheme** of the **National Council for Science and Technology Communication (NCSTC)**. Approved by the funding agency (NCSTC), **DST, GoI.**, for two years (**March 2022-March 2024**) with the sanctioned amount of **Rs. 18.82 Lakhs** & current status: **Ongoing**. Project Id: **DST (NCSTC) (323)/2021-2022/878/MS.**
- “Development of Strategic Interventions through Communication and Science Media for Enforcing Sustainable and Healthy Lifestyles among School Children, Teachers and Women” under the **YASH scheme** of the **National Council for Science and Technology Communication (NCSTC)**. Approved by the funding agency (NCSTC), **DST, and GoI.**, for one year (**December 2020-December 2021**) with the sanctioned amount of **Rs. 13.27 Lakhs** & current status: **Completed**. Project Id: **DST (NCSTC) (279)/2020-2021/768/MS.**
- “High-End Workshop for Enriching the Minds of the Young Talented Researchers and Students with The Data Science and Analytical Tools and Techniques” under **Accelerate Vigyan Scheme** announced by the **Science and Engineering Research Board (SERB), DST, GoI.** Approved by the funding agency (SERB) for two months (**May 2021-July 2021**) with the amount of **Rs. 5 Lakhs** & current status: **Completed**. Project Id: **DST (SERB) (288)/2021-2022/797/MS.**
- “Investigation of Status Quo of Digital Manufacturing in India and Exploration of Digital Shop Floor System with Big Data Analytics,” Under **Faculty Research Grant** from the **Indian Institute of Technology (ISM) Dhanbad**. Approved by IIT(ISM) Dhanbad with the sanctioned amount of **Rs. 8.5 lakhs (December 2020-December 2023)** & current status: **Ongoing**. Project Id: **FRS (144)/2020-2021/MS.**

Co-Principal Investigator for the following project:

- “Factors Affecting Transformational Rural Development and Enhanced Employment Opportunities through Sustainable Entrepreneurial Ventures in Rural areas of Eastern India” Approved by the funding agency Indian Council of Social Science and Research (ICSSR), Ministry of Education, **GoI.**, for two years (**March 2023-March 2025**) with the sanctioned amount of **Rs. 13.67 Lakhs** & current status: **Ongoing**. Project Id: **ICSSR (9)/2023-2024/1002/MSIE.**
- “Technological frameworks for governance: A mechanism design approach” for Grand Challenge Initiative at **IIT Delhi in collaboration** with **Prof. Saptarshi Mukherjee (IIT Delhi), Prof. Joydeep Datta (IIT Kanpur), and Prof. Ruhi**

Sonal (IIT Jodhpur). Approved by the funding agency, with the sanctioned amount of **Rs. 50 Lakhs** & current status: **Ongoing**.

Consultancy (As Consultant In-charge)

- Consultant In-charge of Consultancy Project titled as “**Conducting Social Impact Assessment Study for 14 Villages Under Gare Palma Sector-1 Coal Mines**” for Jindal Power Limited (JPL), Raigarh. (Value: **Rs. 44,60,400**; Cons No.: **CONS/7371/2024-2025**; & current status: **Ongoing**)

Professional Development Programs (As Consultant In-charge/Co- Consultant In-charge)

- Consultant In-charge of Professional Development Programme on “**EDP on Project & Financial Management with MS Project Management and Simulation Software for Executives of SECL**” for Executives of SECL from **6-10 January, 2025** at SECL, Bilaspur. (Value: **Rs.12,39,000**; EDP No.: **EDP/7393/2024-2025**).
- Consultant In-charge of Professional Development Programme on “**Certificate Program on Project and Financial Management with Project Management and Simulation Software for Executives of CCL**” for Executives of CCL from **3-7 September, 2024** at CCL, Ranchi. (Value: **Rs.10,62,000**; EDP No.: **EDP/7301/2024-2025**).
- **Co-Consultant In-charge (CI)** of Professional Development Programme on “**Working Capital Management in Power Projects**” for Executives of NHPC from **28-30 August, 2024** at IIT(ISM), Dhanbad. (Value: **Rs.9,44,000**; EDP No.: **EDP/7295/2024-2025**).
- Consultant In-charge of Professional Development Programme on “**EDP on Project & Financial Management with Project Management and Simulation Software for Executives of SECL**” for Executives of SECL from **5-9 August, 2024** at SECL, Bilaspur. (Value: **Rs.14,16,000**; EDP No.: **EDP/7283/2024-2025**).
- **Co-Consultant In-charge (CI)** of Professional Development Programme on “**Project and Financial Management with Project Management and Simulation Software for Executives of BCCL**” for Executives of BCCL from **6-10 May, 2024** at IIT(ISM), Dhanbad. (Value: **Rs.6,49,000**; EDP No.: **EDP/7232/2024-25**).
- Consultant In-charge of Professional Development Programme on “**Certificate Programme on Project and Financial Management with Application Software**” for Executives of SECL from **24-28 July, 2023** at SECL, Bilaspur. (Value: **Rs.14,16,000**; EDP No.: **EDP/7098/2023-24**).

- Consultant In-charge of Professional Development Programme on “**Certificate Programme on Project and Financial Management with Application Software**” for Executives of SECL from **22-26 May, 2023 at IIT(ISM), Dhanbad. (Value: Rs.14,16,000; EDP No.: EDP/7066/2022-23).**

Thesis/Project Guidance:

Ph.D. student Thesis –

Co-Guide for research scholar: **Surajit Dey (12DR1031)** who submitted his Ph.D. thesis entitled as “**Development of Decision Support System for Operational Scheduling of Major Earth Moving Equipment in an Opencast Coal Mine**”, in partial fulfilment of the requirement for award of degree doctor of philosophy at IIT (ISM) Dhanbad and successfully **defended his thesis** on 23rd July 2021.

Current Ph.D. scholar-

- Mr. Santanu Mondal (**Regn. No.: 22DR0212**), a full time research scholar from the Department of Management Studies & Industrial Engineering.
- Mr. Abhishek Kumar Tarun (**Regn. No.: 23DR0002**), a full time research scholar from the Department of Management Studies & Industrial Engineering.

Guided eleven M. Tech students and three M. Tech students are in the process of completing their master dissertation.

Guided three MBA & five MBA (BA) students for their Project Work and two MBA (BA) students are in the process of completing their project work

International Conference & Paper Presentation Details:

First Author	Author's	Title	Conference	Year	Venue & Date
Sambu ddha Maitra	Rashmi Singh, & Pragya Bajpai	Facilitating Human Capital Quality Control in Service Industry: A Case Study on Urban Company using Automated Query Systems, Visual Tracker Enabled Dashboards and Spreadsheet-based Communication Tools	<i>23rd Conference of the International Federation of Operations Research Societies (IFORS 2023)</i>	2023	Santiago - Chile (July 10-14, 2023)
Pragya Bajpai	Rashmi Singh	Optimize the Idle Freight for Flat Products Via Rail Network: Case Study in Steel Industry	<i>13th Conference of the Association of Asia Pacific Operations Research Societies (APORS 2022)</i>	2022	Eastwood Richmonde Hotel, Quezon City, Manila (November 9 - 12, 2022)

Rashmi Singh	M Mathirajan	A Simulation Study for Assessing the Impact of Release Policies, Dispatching Rules and System Factors in Semiconductor Wafer Fabrication	<i>Fourth International Conference on Business Analytics and Intelligence (ICBAI 2016)</i>	2016	Indian Institute of Science, Bangalore, India (19-21, Dec. 2016).
Rashmi Singh	M Mathirajan	Simulation Based Experimental Investigation for Performance Assessment of Scheduling Policies in Wafer Fabrication.	<i>International Symposium on Semiconductor Manufacturing Intelligence (ISMI2015)</i>	2015	KAIST, Daejeon, South Korea (16-18, Oct. 2015).
Rashmi Singh	M Mathirajan	Simulation Based Cause and Effect analysis of Input Variables in Wafer Fabrication Re-entrant Flow.	<i>Multidisciplinary International Scheduling Conference: Theory & Applications (MISTA 2015)</i>	2015	Prague, Czech Republic (25th – 28th August 2015).
Rashmi Singh	M Mathirajan	A Conceptual Framework for the Performance Assessment of Lot Release Policies	<i>The IEEE International Conference on Industrial Engineering and Engineering Management (IEEM 2014)</i>	2014	Malaysia, Selangor, pp: 948-952, (9 th to 12 th December).

National Conference & Paper Presentation Details:

- Rashmi Singh and M Mathirajan. (2015). A Conceptual Simulation Framework for the Performance Assessment of Input Variables in Wafer Fabrication. *Presented in National Conference on Recent Trends and Developments in Statistics (NCRTDS)*, 21st – 23rd February, 2015, M.D. University, and Rohtak.
- Rashmi Singh and M Mathirajan. (2012). Lot Release Control in Semiconductor Wafer Fabrication. *Presented in Conference on Optimization Modelling and Applications (OPTIMA)*, 29th October-1st November, 2012, Delhi University, New Delhi.

Reviewer in Reputed Journals

- Harvard Business Publishing (HBS)
- International Journal of Production Research (IJPR)
- Annals of Operations Research (ANOR)
- Computers & Industrial Engineering (CAIE)
- Simulation: Transactions of the Society for Modeling and Simulation
- International Journal of Industrial and Systems Engineering

Organized Webinar/W in the Department

Webinar Coordinator: Organized webinar session that includes **9 talks from industry & academia experts** in the department as a **webinar coordinator** to prepare the students to deal with the new normal environment created due to COVID-19 outbreak and to strengthen their brain.

Introduced to the **Design Thinking** Team as a member at IIT (ISM) Dhanbad and successfully completed **Enterprise Design Thinking Practitioner and Enterprise Design Thinking Co-Creator certificates from IBM** and visited **Eastern Coal mines**.

Administration Responsibilities:

- **Executive MBA Co-coordinator:** Handling the role of Executive MBA Co-coordinator from 2024 October till now.
- **DUGC Convener:** Handling the role of DUGC convener from 2024 July till now.
- **Chief Warden:** I was managing the Ruby and Rosaline hostel at the Indian Institute of Technology (ISM) Dhanbad as Chief Warden effective from July 1st 2023 to July 1st 2024.
- **Faculty Coordinator for International Relations & Alumni Affairs**
- **Hostel Warden:** I was managing the Ruby and Rosaline hostel at the Indian Institute of Technology (ISM) Dhanbad as Warden from July 1st 2021-July 1st 2023.
- **Faculty advisor for international students' mobility from July 2021 to July 2023**
- **Faculty Coordinator for Data & Software Lab from July 2022 to July 2024**
- **Faculty Coordinator for Media & Promotion for Naresh Vashisht Centre for Tinkering & Innovation (NVCTI) from July 2022 to July 2023**
- **Member of Departmental Faculty Selection Committee (DFSC) from 2021 Dec to July 2024**
- **Member of Departmental Undergraduate Committee (DUGC)**
- Organizing committee member in 41st Convocation that was held on 13th -14th August 2022.
- Organizing committee member in 42nd Convocation & 97th foundation day that was held on 12th December 2022.
- **Training & Placement Faculty Coordinator:** Handled this role & responsibility from January 2020 - June 2022.
- **Chairperson Admission:** I was chairperson admission at IIM Jammu from 2019 May to 2019 November.

Industrial Experience (2 years approximately):

- **Project Engineer:** Wipro Technologies, Bangalore, from Jan-2010 to Aug-2011.

Training & Workshop:

- **Statistics & R Workshop** (15th to 16th) December, 2015 at Indian Institute of Management, (IIMB), Bangalore.
- Optimization & its Applications (26th to 28th) November, 2012 at **Delhi University**, New Delhi.
- Statistical Machine Learning & Game Theory Approaches for Large Scale Data Analysis (9th to 14th) July, 2012 at M.S. Ramaiah Institute of Technology (MSRIT), Bangalore.
- Mainframe Coding (COBOL, JCL, DBMS, CICS, DIALOG, IMS-DB, Micro focus COBOL and VSAM) and C & data structure (19th January, 2010 to 19th April, 2010) at Wipro (**Wipro Technologies**, Electronic City, and Bangalore - 560100).
- Mathematical Modelling for Performance Oriented Heuristic Techniques & its Application to Industry (7th to 11th) December, 2009 at M.S. Ramaiah Institute of technology (MSRIT), Bangalore.

Membership:

- Life Member of Indian Society for Probability & Statistics (**ISPS**).
- Member of the Institute for Operations Research and the Management Sciences (**INFORMS**).
- Member of the Institute of Electrical and Electronics Engineers (**IEEE**).
- Life Member of the Operational Research Society of India (**ORSI**).

Computer Awareness:

- Language: C, C++ & COBOL, Python
- OS: LINUX, Windows, Windows-Vista
- Software skills: Arena, RStudio, Weka, SPSS, Minitab, Excel, Solver, and Matlab

Awards/Honors/Recognition:

- Received **Women Achievers of the Year 2023 for Empowering Tribal Community** from **Indian Institute of Technology (ISM) Dhanbad** during Foundation day held on 9th December 2023.
- Received “**Excellent Rating**” for the project entitled “Development of Strategic Interventions through Communication and Science Media for Enforcing Sustainable and Healthy Lifestyles among School Children, Teachers and Women” from the **National Council for Science and Technology Communication (NCSTC), Department of Science & Technology (DST), GoI**.
- Received the **best student paper award** from **operational research society of India** during 52nd, Annual Convention of ORSI & International Conference held at

- IIM Ahmedabad** on December, 2019 for the paper entitled “Experimental Investigation for Performance Assessment of Scheduling Policies in Semiconductor Wafer Fabrication – A Simulation Approach”, *International Journal of Advanced Manufacturing Technology (Impact factor: 3.266), 99 (5-8), pp:1503-1520, 2018.*
- **Session Chair** at the *13th Triennial International Conference of the Association of Asia Pacific Operational Research Societies (APORS) 2022*, held from November 9 - 12, 2022 at Eastwood Richmonde Hotel, Quezon City, Manila.
 - Received **SERB International Travel Support (ITS)** for presenting a research paper in **IFORS 2023** conference.
 - Recipient of MHRD Scholarship for PhD.
 - Received **SERB International Travel Support (ITS)** for presenting a research paper in 2014 IEEE conference (**IEEM2014**).

Personal Details:

- **Father’s Name:** Dr. Ashok Kumar Singh
- **Mother’s Name:** Mrs. Bhawna Singh
- **Sex:** Female
- **Marital Status:** Married
- **Languages Known:** English & Hindi
- **Hobbies:** Organizing conferences/seminars, conducting workshops, music, sports and travelling
- **Passport Details:** Passport Number: U7231311, Valid till – 25th June, 2030.

References for recommendation letter:

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- Prof. U. Dinesh Kumar
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- Prof. M.K. Tiwari

Professor

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