

# Dr. Mayank Kumar Jha

Data Scientist

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## Education

- 31/07/2015– **Ph.D (Statistics)**, Indian Institute of Technology, Patna.  
01/10/2021 Statistical Inference for Reliability in a Multicomponent.
- 30/07/2013– **M.Tech (Mathematics & Computing)**, Indian Institute of Technology, Patna, CGPA - 9.27/10.  
30/07/2015 Improved Algorithm for Active Learning
- 07/2010– **M.Sc. Mathematics**, Patna, University, First div. (68%).  
07/2012

## Work Experience

- Since, **Data Scientist**, GEP, Hyderabad, India.  
Jan-2022
- Oct 2020, **Associate Data Scientist**, GEP, Hyderabad, India.  
Dec-2021

## Technical Skills

- Applications Latex, MS office, Excel
- Programming Languages R, Python, PySpark in Azure, elastic search, SQL, MATLAB
- Platforms Windows, Linux
- Packages and Softwares Mathematica, Math Type

## Selected Publications

- Petropoulos, C., Tripathi, Y. M., & **Jha, M.k.**(2022). Estimation of  $P(Y < \ln X)$  for lognormal distribution. Quality Technology Quantitative Management (accepted).
- Singh, D.P., **Jha, M. K.**, Tripathi, Y. M. & Wang, L., (2022). Reliability estimation in a multicomponent stress-strength model for unit Burr III distribution under progressive censoring. Quality Technology Quantitative Management, DOI: 10.1080/16843703.2022.2049508.
- Jha, M. K.**, Dey, S., Alotaibi, R., Alomani, G., & Tripathi, Y. M. (2021). Multicomponent Stress-Strength Reliability estimation based on Unit Generalized Exponential Distribution. Ain Shams Engineering Journal, Vol. 13(5), 101627.
- Jha, M. K.**, Tripathi, Y. M., & Dey, S. (2021). Multicomponent stress-strength reliability estimation based on unit generalized Rayleigh distribution. International Journal of Quality & Reliability Management, Vol. 38(10), 2048-2079.
- Jha, M. K.**, Dey, S., Alotaibi, R. M., & Tripathi, Y. M. (2020). Reliability estimation of a multicomponent stress-strength model for unit Gompertz distribution under progressive Type II censoring. Quality and Reliability Engineering International, 36(3), 965-987.
- Jha, M. K.**, Dey, S., & Tripathi, Y. M. (2019). Reliability estimation in a multicomponent stress-strength based on unit-Gompertz distribution. International Journal of Quality & Reliability Management.
- Tripathi, Y. M., Petropoulos, C., & **Jha, M.k.** (2018). Estimation of the shape parameter of a Pareto distribution. Communications in Statistics-Theory and Methods, 47(18), 4459-4468.

## Projects

- Role and Responsibilities in projects:
  - Requirement gathering
  - Implementation
  - Deployment to different environments
- 1. Supplier recommendation (**Since-Nov-2020**)
  - Algorithms
    - DBSCAN
    - Levenshtein score
    - jaccard similarity w.r.t word and character
- 2. Parametric Cost Model (**Since-Nov-2020**)
  - Algorithms
    - TFIDF
    - K-means cluster
    - Random forest
    - Gradient Boosting

### 3. Guided Buy (Since-March-2021)

- Algorithms
  - Elastic search, Libshort SVM
  - Levenshtein score
  - Jaccard similarity with respect to word and characters

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## PhD Research Work

Title	<i>Analysis of Life Time Distributions under Multicomponent Stress-Strength Parameters</i>
Supervisor	Dr. Yogesh Mani Tripathi
Description	<p>During my Ph.D., I have considered making statistical inferences for unknown quantities of multicomponent stress-strength models set up for a different lifetime distribution with support on a bounded interval. A finite number of test units is put into operation in a life testing experiment, and under some given operating conditions, failure times of units are recorded. Sampling schemes include:</p> <ul style="list-style-type: none"><li>○ Complete sampling.</li><li>○ Type-I censoring (test continues until a prefixed time point is reached).</li><li>○ Type-II censoring (trial continues till a prefixed number of failure times recorded).</li></ul> <p>also, I have derived different inferential results from setting up the following lifetime distributions:</p> <ol style="list-style-type: none"><li>1. Generalized Rayleigh Distribution</li><li>2. Inverse exponentiated distributions</li><li>3. Gompertz Distribution under Progressive Type-II Censoring</li><li>4. Generalized-Rayleigh distributions</li><li>5. Extensive discussions are made under various sampling schemes, such as progressive type-II censoring, progressive interval censoring, and generalized progressive hybrid censoring, and such censored data frequently appeared in applications</li><li>6. Statistical methods employed include frequentist and Bayesian approaches for point estimators of multicomponent stress-strength reliability, bootstraps, and Monte Carlo simulations for comparing various point and interval estimators. Moreover, some actual data illustrations are presented</li></ol>
Applications of my Ph.D. work	In reliability modeling and statistical inference, in industries such as reliability and life testing experiments.

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## Links

Google Scholar	<a href="https://scholar.google.com/citations?user=chNToPkAAAAJ&amp;hl=en">https://scholar.google.com/citations?user=chNToPkAAAAJ&amp;hl=en</a>
LinkedIn	<a href="https://www.linkedin.com/in/mayank-kumar-jha-b34a8a79/">https://www.linkedin.com/in/mayank-kumar-jha-b34a8a79/</a>

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## Awards & Achievements

- GATE Examination 2013 with all India Rank – 334 .
- **Ph.D. Representative** and a member of **Core Committee**, Students' & Gymkhana, IIT Patna, 2018-19.
- **Hall Secretary** of Boys Hostel, D-Block IIT Patna, 2017-18.
- **Inter IIT Cricket**, 2016
- Nominated as **reviewer** for the "Journal of Applied Statistics."
- Nominated as **reviewer** for the "Reliability Engineering and System Safety."
- Nominated as **reviewer** for the "Communications of Statistics ? Theory and Methods."