

# Anjali Suman

B. Sc., M. Sc.

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🌐 [github.com/AnjaliML](https://github.com/AnjaliML)

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## Research Interests

- |                         |                                  |                               |
|-------------------------|----------------------------------|-------------------------------|
| <b>Machine Learning</b> | ○ Computer Vision                | ○ Survival Analysis           |
|                         | ○ Physics-aided Machine Learning | ○ Gradient Descent Algorithms |
|                         | ○ Sampling Techniques            | ○ Time Series                 |
|                         | ○ Exploratory Data Analysis      | ○ Data Visualization          |

## Education

- 2018 **Master of Science in Statistics**, *Hindu College, University of Delhi*, Delhi, 59%\*
- 2016 **Bachelor of Science in Statistics with Honors**, *Ramanujan College, University of Delhi*, Delhi, 75%
- 2013 **High School**, *Krishna Niketan (CBSE)*, Patna, Bihar, 80%
- 2011 **Secondary School**, *Krishna Niketan (CBSE)*, Patna, Bihar, 9.2\*
- \*on a scale of 10

## Technical Skills

Python

PyTorch, Jupyter

Computational Statistical Packages

R, SPSS, SAS (Basic knowledge)

Computer Languages

C++, C (Working knowledge)

Others

MATLAB, Octave, Ubuntu, L<sup>A</sup>T<sub>E</sub>X

## Work Experience

- June, 2022 - Oklahoma State University (online)
- Present (Deep) Survival analysis for predictive maintenance of machines
- Mentor** Prof. Akash Deep
- 2019-20 Sureland Industrial Fire Safety Limited
- 2017 Cricwin, Cheruniq Technology Pvt Ltd

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## Project Involvements

### Temporal Bayesian optimization

**Mentor** Prof. Akash Deep

- 2022
- This project aims to extend the classical Bayesian optimization to cases where the system's response has a temporal variation.
  - We validate this code using an analytically well understood physical system of impacting liquid drops on rigid solid surfaces.
  - The method can easily be generalized to multi-dimensional control phase space which remains intractable to analytical probing.

### Deep predictive maintenance

**Mentor** Prof. Akash Deep

- 2022
- This project aims to combine machine learning with survival analysis (bio-statistics) to predict the failure of machines in an industry.
  - We draw analogy between machine failure and survival analysis concepts.
  - We aim to implement a multi-event failure model to predict the survivability of machines in an industrial setting.

### Inter-state migration pattern in India

**GitHub:** <https://github.com/AnjaliML/InterStateMigrationIndia.git>

- 2022
- We bring out a comparative picture of people migrating to neighboring states and the rest of the country.
  - We find a list of the top 10 employing states.
  - We bring out a clear picture of the gender ratio of workers migrating to a given state from states all over India.

### Sureland industrial fire safety limited

2019-20 Design & Analysis Department

- The company specialized in fire safety. I used machine learning to analyse fire accident statistics and the effectiveness of smoke detectors. An important aspect was also to judge and recommend the location of smoke detectors.

### Fantasy league score calculator

**GitHub:** <https://github.com/AnjaliML/FantasyCricket.git>

- 2017
- Determination of factors that affect the cricket's performance in a given match through confirmatory factor analysis.
  - Determination of the weights of the contributions made by these factors on the value added by the player to his/her team.
  - Prediction of the credit score of the individual players based on past records and the factors obtained through confirmatory factor analysis

### Quality Assessment of Academic Website Using Sampling Techniques

**GitHub:** <https://github.com/AnjaliML/AcademicWebsiteSampling.git>

**Mentor** Dr. Garima Priyadarshini

- 2016 ○ A Variety of studies has been conducted on websites.
- These studies are broadly based on heuristic analysis, surveys through questionnaires, interviews or web analysis tools (like Google analytics).
- We made a hypothesis according to questionnaire and analyze them through responses using some sampling techniques

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## Professional Development

- 2015 Indian Society of Agricultural Science: 68<sup>th</sup> Annual Conference.
- 2014 IBM SPSS (Statistical Package for the Social Sciences) workshop.
- 2014 INCOMECT (International Conference on Management Education & Corporate Transformation)
- 2014 Workshop on R-Language.
- 2014 WinQSB for Operation Research workshop.
- 2013 International DU conference.

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## Languages

English	Fluent	<i>Daily practice, all work performed in English</i>
Hindi	Native	<i>Mother Tongue</i>

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## Extra-Curricular

- 2016 Conference organizer team: Recent Statistical Computing Techniques and their applications

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## References

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