

BIODATA



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PROFESSIONAL SUMMARY

Dedicated researcher in Agricultural Statistics with extensive experience in machine learning, deep learning and statistical analysis. Proven ability to conduct impactful research, publish in reputed journals and present findings at national and international conferences. Skilled in programming and data analysis with a strong background in teaching and project management.

RESEARCH INTERESTS

Statistical modelling, Artificial Intelligence, Deep Learning and Machine Learning Techniques in Agriculture, Agricultural Price Forecasting, Environment and Climatic studies.

EDUCATIONAL CARRIER

Degree/ Certificate	University/ Institute	Year
Bachelor of Science (B.Sc.) in Agriculture	University of Agricultural Sciences, Dharwad, Karnataka	2019
Master of Science M.Sc. (Agri.) in Agricultural Statistics	University of Agricultural Sciences, Bangalore, Karnataka	2021
Ph.D. in Agricultural Statistics	ICAR-Indian Agricultural Research Institute, New Delhi	2024

EXPERIENCE

- Presently appointed as **Assistant Professor of Agricultural Statistics** at College of Agriculture, Vijayapur under University of Agricultural Sciences, Dharwad, dealing with Teaching, Research and Extension. (*June, 2024 - till date*)
- Three years of Research experience during Doctoral research work on “**Modeling Agricultural Price through Deep Learning Techniques**”. (*2021 - 2024*)
- Two years of Research experience during my Masters in Agricultural Statistics on “**Statistical Analysis of Peanut Bud Necrosis Disease Incidence of Groundnut in Pavagada**”, using probability distributions and Machine Learning techniques. (*2019 - 2021*)

SKILLS

Programming languages known: Python, R, SQL (Basics), SPSS, Advanced Excel and LaTeX with experience in leading collaborative projects, teaching and team management by conducting multidisciplinary research and swiftly adapting to emerging trends.

AWARDS AND RECOGNITIONS

- **ASRB-NET** in Agricultural Statistics
- **UGC-NET** in Population Studies
- **ICAR-Senior Research Fellowship (SRF)** by ICAR during my Doctoral degree programme, New Delhi. (*2021-2024*)
- **Young Scientist Award** by Society for Scientific Development in Agriculture and Technology. (*December, 2024*)

ARTICLES PUBLISHED

1. **Harish Nayak G. H.**, Md. Wasi Alam, K. N. Singh, Avinash, G., Mrinmoy Ray and Rajeev Ranjan Kumar. (2024). Modelling monthly rainfall of India through transformer-based deep learning architecture. *Modeling Earth Systems and Environment*. <https://doi.org/10.1007/s40808-023-01944-7>
(**Impact Factor: 2.7; NAAS rating: 8.7**)
2. **Harish Nayak G. H.**, Md. Wasi Alam, K. N. Singh, Avinash, G., Mrinmoy Ray, Rajeev Ranjan Kumar and Chandan Kumar Deb. (2024). Exogenous variable driven deep learning models for improved price forecasting of TOP crops in India. *Scientific Reports*, 14, 17203. <https://doi.org/10.1038/s41598-024-68040-3>
(**Impact Factor: 3.8; NAAS rating: 9.8**)
3. **Harish Nayak G. H.**, Md. Wasi Alam, K. N. Singh, Avinash, G., Mrinmoy Ray, and Rajeev Ranjan Kumar. (2024). N-BEATS Deep Learning Architecture for Agricultural Commodity Price Forecasting. *Potato Research*. <https://doi.org/10.1007/s11540-024-09789-y>
(**Impact Factor: 2.3; NAAS rating: 8.3**)
4. **Harish Nayak G. H.**, Md Wasi Alam, G. Avinash, Rajeev Ranjan Kumar, Mrinmoy Ray, Samir Barman, K.N. Singh, B. Samuel Naik, Nurnabi Meherul Alam, Prasenjit Pal, Santosha Rathod, Jaiprakash Bisen. (2024). Transformer-based deep learning architecture for time series forecasting, *Software Impacts*, 22, 2024, 100716.
(**Impact Factor: 1.3; NAAS rating: 7.3**)

5. Avinash, G., Ramasubramanian, V., Ray. M, Paul, R.K., Godara, S., **Harish Nayak G. H.**, Kumar, R.R., Manjunath, B., Dhahiya, S. and Iquebal (2024). Hidden Markov guided Deep Learning models for forecasting highly volatile agricultural commodity prices, *Applied Soft Computing*, 158, 111557. <https://doi.org/10.1016/j.asoc.2024.111557>
(Impact Factor: 7.2; NAAS rating: 13.20)
6. **Harish Nayak G. H.**, Md. Wasi Alam, B. Samuel Naik, Varshini B. S., Avinash, G., Mrinmoy Ray, Rajeev Ranjan Kumar and K. N. Singh. (2025). Meta-transformer: leveraging metaheuristic algorithms for agricultural commodity price forecasting. *Journal of Big Data*, 12, 138. <https://doi.org/10.1186/s40537-025-01196-5>
(Impact Factor: 8.6; NAAS rating: 14.60)

BOOK CHAPTERS

7. **Harish Nayak G. H.**, Avinash, G., Veershetty, Baishya, M and Vinay H. T. (2023). **Multivariate Time Series Analysis for Prediction of Rainfall – A machine Learning Approach**, In: A Practical Hand Book on GIS and R Programming: An Integrated Approach towards understanding the changing dynamics in Water Resources, Eds. Surendran, U., NagaKumar, K. Ch and Naveena, K. (*in press*). New Delhi, 110034: NIPA GENx Electronic Resources and Solutions Pvt. Ltd.
8. Avinash, G., Veershetty, **Harish Nayak G. H.**, Vinay H. T. and Baishya, M. (2023). **Revolutionizing Rainfall Prediction: Boosting Accuracy with a Hybrid Statistical and Deep Learning Approach**, In: A Practical Hand Book on GIS and R Programming: An Integrated Approach towards understanding the changing dynamics in Water Resources, Eds. Surendran, U., NagaKumar, K. Ch and Naveena, K. (*in press*). New Delhi, 110034: NIPA GENx Electronic Resources and Solutions Pvt. Ltd.
9. Veershetty, **Harish Nayak G. H.**, Avinash, G., Vinay H. T. and Moumitha Baishya (2023). **Rainfall Prediction using Neural Networks**, In: A Practical Hand Book on GIS and R Programming: An Integrated Approach towards understanding the changing dynamics in Water Resources, Eds. Surendran, U., NagaKumar, K. Ch and Naveena, K. (*in press*). New Delhi, 110034: NIPA GENx Electronic Resources and Solutions Pvt. Ltd.

ORAL PRESENTATIONS IN INTERNATIONAL/ NATIONAL CONFERENCES

1. **73rd Annual Conference of Indian Society of Agricultural Statistics from 14th-16th Nov, 2022, at Sher-e-Kashmir University of Agricultural Sciences and Technology of Kashmir, J&K, India.**
Paper title: Forecasting Rainfall Using Deep Learning Models in Coastal Sub-Division of Karnataka
2. **International Indian Statistical Association Annual Conference, National Science Seminar Complex, Indian Institute of Science, Bengaluru 26th – 30th December, 2022.**
Paper title: Forecasting Agricultural Price Series using Multilayer Perceptron Neural Network and Metaheuristic Algorithms
3. **Ninth International Conference on Statistics for Twenty-first Century-2023 (ICSTC - 2023)** organized by the **International Statistics Fraternity (ISF), School of Physical and Mathematical Sciences and Department of Statistics, University of Kerala, Trivandrum during 15th-18th December, 2023.**
Paper title: Forecasting Agricultural Price Series using N-BEATS Deep Learning Architecture

4. **International Conference on Statistics (ICS 2023)** organized by the **Nilkamal School of Mathematics, Applied Statistics and Analytics, Mumbai, Maharashtra** from **20th-22nd March, 2023**.

Paper title: A Transformer-based Deep Learning Approach for Forecasting Rainfall in India

NPTEL COURSES COMPLETED UNDER SWAYAM

Twelve Weeks NPTEL Course on “**Deep Learning**” during 25 Jul 2022 – Oct 2022 organized by IIT Madras.

Four Weeks NPTEL Course on “**Python for Data Science**” during 25 Jul 2022 – 19 Aug 2022 organized by IIT Madras.

Twelve Weeks NPTEL Course on “**Data Analytics with Python**” during Jan 2023 – Apr 2023 organized by IIT Roorkee.

Eight Weeks NPTEL Course on “**Data Mining**” during Jan 2023 – Mar 2023 organized by IIT Kharagpur.

TRAINING PROGRAMMES ATTENDED

2 months Winter School on Deep Learning (WSDL): From Perceptrons to Diffusion Models organized by Electronics and Communication Sciences Unit, **Indian Statistical Institute, Calcutta** with chief guest lecture by **Prof. Geoffrey Hinton**. (06 Jan 2023 – 04 March 2023)

Twenty-One Days International Training cum Workshop Program on "**Agriculture 3.0: A Futuristic Approach Towards Smart Agriculture and Sustainable Urban Farming**" organized by Agro-Environmental Education and Farmer’s Welfare Society, Punjab and Just Agriculture during 30 Apr – 20 May 2022.

Six Weeks Online Course on "**Statistical Techniques for Agriculturists**" during 31 Mar 2022- 26 July 2022 organized by IIT Kanpur and Common wealth of learning, Canada.

BOOKS

Deep Learning Models and Applications, 2022, AGPH Books, 1-221, ISBN 978-93-95936-77-4.

POPULAR ARTICLES PUBLISHED

1. Pros and Cons of Drones in Agriculture, 2022, Agriculture and Food: E-Newsletter, 4(11), 01-02, ISSN: 2581-8317. (Article ID-38400)
2. Drones in Agriculture, 2022, Agriculture and Food: E-Newsletter, 4(11), 03-04, ISSN: 2581-8317. (Article ID-38401)
3. Importance of Forecasting Agricultural Prices Using Time Series Models, 2022, Agriculture and Food: E-Newsletter, 4(11), 40-41, ISSN: 2581-8317. (Article ID-38413)
4. Emerging Technologies in Agriculture, 2022, Agriculture and Food: E-Newsletter, 4(11), 66-67, ISSN: 2581-8317. (Article ID-38421)
5. Global Positioning System (GPS) in Precision Agriculture, 2022, Agriculture and Food: E-Newsletter, 4(11), 68-69, ISSN: 2581-8317. (Article ID-38422)
6. Blockchain in Modern Agriculture, 2022, Agriculture and Food: E-Newsletter, 4(11), 144-145, ISSN: 2581-8317. (Article ID-38453)
7. Livestock Farming Technology in Smart Farming, 2022, Agriculture and Food: E-Newsletter, 4(11), 167-168, ISSN: 2581-8317. (Article ID-38460)
8. Technologies in Smart Farming, 2022, Agriculture and Food: E-Newsletter, 4(11), 178-179, ISSN: 2581-8317. (Article ID-38464)

9. Enhancing Precision in Area-Specific Estimates: Small Area Estimation as a Powerful Alternative to Conventional Direct Estimation Methods, 2023, Agriculture and Food: E-Newsletter, 5(11), 94-96, ISSN: 2581-8317. (Article ID-44332)