

DR N R N V GOWRIPATHI RAO

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Citations, H-index and i10: 240, 8 and 7



SUMMARY

- **Highly knowledgeable and qualified Agricultural Engineer with over 5 years of experience in teaching cum industry for training graduate and post-graduate students in Mechanical Engineering, Design Engineering, and Farm Machinery and Power Engineering subjects**
- **Hands-on experience in teaching and assisting students for Ph.D. thesis, educational projects, and research work**
- **Proactively participated in conferences and professional research to enhance and continue learning on subject matters from experts**
- **Proven track record in connecting with students to deliver topics that motivate students' interest in the agricultural engineering subjects**
- **Highly skilled at explaining and clarifying material in a manner that students of varying levels can easily understand**
- **Profound knowledge of the subject areas and ability to teach students by using various methods, with excellent communication and written skills**
- **Deftly collaborating with people from the scientific community from different specializations to develop new agricultural technologies that can be used for the betterment of the farming community**
- **Hands-on experience in the industry in the field of farm machinery design and development**
- **Subjects Taught - Kinematics and dynamics of machinery, Machine design, Farm Machinery, and Equipment, Farm Machinery Design, Agricultural Structures Design, Advanced Mechanical Engineering Design, and Design of Mechanisms**

SKILL SET

Publications | Assessment & Evaluation | Student Management | Classroom Management | Teaching Management | Student Performance Management | Effective Communication Skills | Student Counseling | Student Supervision | Creative Lesson Planning | Time Management | Learning Methodologies | Design of Machinery | Research and Analysis | Analytical and Critical Thinking | Research Implementation | Team Building | Training and mentoring

RESEARCH INTERESTS

New Technological Developments in Farm Machinery, Agricultural Machinery Development, Application of Precision-based technologies in existing agricultural machinery, Optimization Techniques, Robotics, Automation, and Mechanical Engineering Design, Artificial Intelligence and Machine Learning Applications in Agriculture.

PROJECTS GRANTED

1. **Establishment of Honey Bee Processing Unit as a co-investigator in Rajiv Gandhi University, Rono Hills, Arunachal Pradesh, in collaboration with NECTAR and National Bee Board, costing about 2.87 Cr.**
2. **Project on "Effect of Organic Fertilizers on Growth and Yield of Coix lacryma-jobi L. (Gavedhuka)" as co-investigator in collaboration with the Regional Ayurveda Research Institute, Itanagar, costing about 22 Lac.**

EDUCATION

Advance Diploma in Artificial intelligence and Machine Learning	from Acharya Nagarjuna University, Guntur, India (February 2023)
Doctor of Philosophy (Ph.D.) in Design Engineering - Mechanical	from Malaviya National Institute of Technology, Jaipur, India (Jun 2020) <i>Thesis: Design and development of Vibratory Tillage Cultivator</i>
Post-Graduate Diploma in Technology Management Agriculture (PGDTMA)	from Central University of Hyderabad, Hyderabad, India (Jun 2018)
Master of Technology in Farm Machinery & Power Engineering	from Maharana Pratap University of Agriculture and Technology (MPUAT), Udaipur, India (Aug 2015) <i>Project: Worked on a nanostructured wear-resistant coating for a cultivator Reversible shovels and published a conference paper in AIP-Proceedings</i>
Bachelor of Technology in Agricultural Engineering	from Junagadh Agricultural University, Junagadh, India (Jun 2012) <i>Project: Worked on the ergonomic evaluation of a power tiller-operated rotavator and published a conference paper in the ISAE Convention</i>

EXPERIENCE

Asst Professor and Head, Department of Agricultural Engineering, Rajiv Gandhi University (A Central University), Arunachal Pradesh, May 2023- Present

- Conducted lectures and lab sessions for Bachelor of Agriculture Sciences students on Farm Machinery and Power Engineering subjects.
- Establishing the laboratory for the Agricultural Engineering branch and designing laboratory demonstrations to illustrate course concepts.
- Conducting research guidance for Master Agricultural Engineering students and Doctoral Students.
- Overall administration and development of the department and university members in different committees.

Assistant Professor Research |Karnavati School of Research, Karnavati University, Gandhinagar, India, Jan 2022- May 2023

- Responsible for the Entire Research School Coordination and Activities.
- Proficiently collaborating and conducting research activities in the University, drafting research papers, and submitting research proposals to nodal agencies.
- Guiding research scholars and graduate students in the university with different research topics. Attending International conferences in India and other foreign countries.
- Teaching master students in the area of ergonomics and design.
- Conducting coursework sessions on Research Methodology and Paper Writing.
- Actively conducting workshops for Research Awareness.

Assistant Professor | Aditya Engineering College, Kakinada, India

Dec 2020 - Dec 2021

- Conducted lectures and lab sessions for Bachelor of Agricultural Engineering students on Farm Machinery and Power Engineering subjects.
- Established a virtual laboratory for the Agricultural Engineering branch and designed laboratory demonstrations to illustrate course concepts.
- Worked as the college's NBA and NAAC central team coordinator and Deputy Head of the Department for Agricultural Engineering.
- Research Coordinator of the Agricultural Engineering Department.

Assistant Professor | Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore, India

Jan 2020 – Nov 2020

- Taught Farm Machinery and Power Engineering subjects to Agriculture and Agricultural Engineering students.
- Established a laboratory for the Agricultural Engineering branch and designed laboratory demonstrations to illustrate course concepts

Teaching Assistant | Malaviya National Institute of Technology Jaipur, India

July 2016 – Dec 2019

- Worked as a Teaching Assistant and taught lectures on Kinematics and Dynamics of Machines, Design of Mechanisms, and MATLAB session basics to graduate and post-graduate students.
- Developed animations in MATLAB for explaining concepts relating to real-life applications also designed MATLAB Manuals for the undergraduate students.
- Designed laboratory demonstrations to illustrate course concepts and assisted the Professor in designing course materials, and taught tutorials on design-related subjects.
- Assisted Professor during lectures and supervised 6 Master's thesis and 6 Bachelor's projects.
- Invigilation during Mid-Term and End-Term exams.

Assistant Professor | Parul University, Vadodara, India

Feb 2016 – July 2016

- Worked as a Department Coordinator of the Agricultural Engineering section and designed the total course curriculum of the B.Tech (Agricultural Engineering) program according to ICAR-New Delhi norms and participated in the Board of Studies meetings.
- Developed a laboratory of Farm Machinery and Power Engineering in college.
- Worked as a seminar evaluation panel member for postgraduate students.

Research Associate | National Innovation Foundation NIF, Ahmedabad, India

June 2015 – Jan 2016

- Worked on sustainable grassroots technologies in the Value addition research and development department and scouted, and evaluated the grassroots innovations and technologies prior to art searches for the innovations.
- Coordinated with the intellectual property department for filing engineering innovations.
- Prepared prototypes for grassroots innovations for programs like IGNITE-DST.
- Worked on rural agricultural machinery and assisted in improving the product.

Graduate Engineer Trainee | Tractors and Farm Equipments Limited, Chennai, India

July 2012 – July 2013

- Conducted product analysis, comparative study with other competitors, and interacted with customers based on this, and reported to the Management for better utilization of the Product.
- Closely worked with the Research and Development Department for the design and development of new farm machinery solutions.
- Testing and Evaluation of Farm Technologies in the Field.

ACHIEVEMENTS

1. An expert talk on the topic “Basics of Agricultural Engineering” was organized by SAGE University, Bhopal, Online in November 2023.
2. One-day workshop on “Recent Trends: Sensing in Agriculture” conducted by the IEEE Sensors Council in collaboration with DA-IICT, Gandhinagar, Physical, June 2023.
3. Lead speaker, International Conference on “Emerging Technologies in Agriculture and Allied Sciences (ETAAS-2024), Online, August 2024.
4. Resource Person in a one-day online orientation workshop being organized by NERIST under Unnat Bharat Abhiyan, Online, August 2025.
5. Expert Talk on “Application and Fundamentals of MATLAB for Agricultural Machinery Design” conducted by MPKV Rahuri, Online, December 2025.

6. Resource person in Faculty Development Program (FDP) on “AI in Agriculture: Smart & Sustainable Farming” at CDAC Mohali in collaboration with The Neotia University, West Bengal, Online, May 2026.
7. Session Expert for the Faculty Development Programme (FDP) on “Emerging Trends in Pedagogy and ICT-Driven Education in the Industry 4.0 Era”, organized by Medicaps University, Indore, Online, February 2026.
8. Keynote Speaker in One-Day Vocational Training Cum National Webinar on the theme: “Role of Drone Technology and Solar Energy in Modern Agriculture”, ANDUAT Ayodhya, Online, April 2026.
9. Recently awarded the prestigious Early Career Award by the Asian Association of Agricultural and Biological Engineering (AAAE), Nepal, in the field of Agricultural Engineering.
10. Attended the International conference MMMS2024 – The Fourth International Conference on Material, Machines, and Methods for Sustainable Development held at Da Nang city, Vietnam, on September 19-22, 2024.
11. Recently shortlisted for the Young Researcher Award for the International Conference on “Innovative Approaches in Agriculture, Horticulture and Allied Sciences to be held at SGT University, on March 29, 2023, in Gurugram, New Delhi
12. Awarded Young Scientist recently (January 2023) in the National Conference on Sustainable Development through Agriculture Production, Protection & Policy Landscape for Crop Care and JUST AGRICULTURE GROUP.
13. Invited to deliver a talk on MATLAB Applications for Engineering Problems, organized by the National Institute of Fashion Technology, Government of India, recently (March 2023) at Gandhinagar.
14. Invited to deliver a talk on Farm Mechanization for Ginger and Turmeric Machinery, organized by the Spices Board of India, Government of India, recently (January 2023) held at Hyderabad.
15. Invited to deliver a talk on a one-week Faculty Development Programme (FDP) on "Future aspects in design, manufacturing and safety" held on June 14, 2021, to June 18, 2021, held at Rustamji Institute of Technology, BSF ACADEMY TEKANPUR, Gwalior, affiliated to RGPV Bhopal.
16. Invited to deliver a talk on MATLAB in the winter school held on February 15, 2022 at Central Institute of Agricultural Engineering, Bhopal, and ICAR New Delhi.
17. Invited to deliver a talk on Farm machinery equipment on April 19, 2022, at Government Polytechnic Awasari, Maharashtra.
18. Invited to deliver a talk during the short-term course "Emerging Trends in Mechanical Engineering", 2020, at K N Modi University, Rajasthan.
19. Invited to deliver a talk in a webinar on "Application of MATLAB in Mechanical Engineering Design", 2020, at Oriental Group Madhya Pradesh.
20. Invited to deliver Guest Lectures to B.Sc. (Hons) Agriculture students in SRMIST Chennai during April, 2020 to July, 2020.
21. Invited to deliver a talk on MATLAB in winter school held on February 28, 2020, at Central Institute of Agricultural Engineering, Bhopal, and ICAR, New Delhi.
22. Invited as a resource person for a CEP short-term course on MATLAB Programming for Engineering Applications - 2019 at IIT Kharagpur.
23. Invited to deliver a talk during the Workshop on "Synthesis of Mechanisms" (WoSM - 2019) at Manipal University Jaipur.
24. Full Fellowship for Ph. D. granted by the Ministry of Human Resources and Development, India

TRAININGS ATTENDED

- Practical training programme on Tractor & Implement Testing at CFMTTI Budni, MP, India for one month (2014).
- Practical training programme in Remote Sensing & GIS Applications at BISAG, Gandhinagar, Gujarat, India for one month (2011).
- Practical training programme on Farm Power and Machinery at CFMTTI Budni, MP, India for one month (2010).

WORKSHOPS/SEMINARS

- Successfully completed "Advanced Engineering Optimization through Intelligent Techniques (AEOTIT)" held during 27-31 March 2017 at SVNIT, Surat.
- Successfully completed "Three Days National Workshop on Nature Inspired Optimization" held from 21st to 23rd Oct. 2016 at MNIT, Jaipur.
- Successfully completed One Week Short Term Course (STC) on "Computational and Statistical Techniques in Engineering, Sciences and Agriculture" held at CTAE, Udaipur from 25.02.2019 to 01.03.2019.
- Successfully completed a one-week Short Term Course (STC) on "CFD with OPEN FOAM" held at MNIT Jaipur from 10.08.2019 to 14.08.2019.
- Successfully completed AICTE Training and Learning (ATAL) Academy "Design and Analysis of Mechanisms and Machines through Motion View and MATLAB" Training programme held from 11 to 15 November. 2019 " at CTAE, Udaipur.
- Successfully completed AICTE Training and Learning (ATAL) Academy "Robotics" Training programme held from 11 to 15 June. 2020" at CTAE, Udaipur.
- Completed MOOC NAARM Artificial Intelligence in Agriculture held from March 1 to March 31, 2026, Hyderabad.
- One-month Faculty Induction Program conducted by MMTTC MZU, Malaviya Mission Teacher Training Centre (Online), September 2024.
- Two-day Faculty Development Program organized by the School of Technology, Woxsen University, Hyderabad, on "Tech-Driven Pedagogy: Research-led Insights into Teaching Innovations", (Online), February 2024.
- 6-Day FDP on Deep Learning, Gen AI, and their applications in Agriculture, organized by the Department of Computer Science and Engineering, Tezpur University, in Association with Pantech e Learning (Online), August 2025.
- Two-Week Interdisciplinary Refresher Course (Online), "Applications of AI in Science, Technology, Engineering, Mathematics and Business (STEMB)" conducted by Assam University Silchar, (Online), August 2025.

WORKSHOPS/SEMINARS/CONFERENCES CONDUCTED

- Conducted NEP webinars on Aspects and Implementation of National Educational Policy (NEP-2020), Online, August 2023.
- Conducted a one-day webinar on "Application of Drones in Agriculture", Online, September 2023.
- One-Week International Training Programme and Workshop on the Application of MATLAB, SPSS, and R Programming in Agriculture and Allied Sciences, Online, December 2024.
- Workshop on Precision Agriculture with the University of Maryland, Offline, November 2024.
- Workshop on Power Tiller Maintenance and Operation with NERFMTTI Assam, Offline, December 2024.
- Conducted National Conference on Agriculture, Environment and Sustainable Development (NCAESD), Hybrid, March 2025.
- International Conference on Modern Agriculture & Allied Sciences (ICMAAS-2025): Bridging Engineering, Policy, and Practice for a Sustainable and Resilient Future, Online, December 2025.
- 21 Days Winter School on "Application of Artificial Intelligence in Agriculture and Allied Sciences (AGRINTELLIGENCE 2026), February 2026.

PUBLICATIONS

1. Pathak, S. V., & Gowripathi, N. R. N. V. (2015). State of Farm Mechanization in Indian Agriculture. *Journal of Scientific and Engineering Research*, 1(2), 36-46.
2. Pathak, V. K., Kumar, S., Nayak, C., & Rao, N. G. (2017). Evaluating Geometric Characteristics of Planar Surfaces using Improved Particle Swarm Optimization. *Measurement Science Review*, 17(4), 187-196. SCI IF-1.51.
3. Rao, G., Chaudhary, H., & Sharma, A. (2018). Design and analysis of a vibratory mechanism for tillage application. *Open Agriculture*, 3(1), 437443. SCI-1.9, Scopus, ESCI.
4. Rao, N. G., Chaudhary, H., & Sharma, A. K. (2019). Optimal design and analysis of oscillatory mechanism for agricultural tillage operation. *SN Applied Sciences*, 1(9), 1003. SCI-2.8, Scopus, ESCI.
5. Rao, G., Chaudhary, H., and Sharma, A.K. (2019). Design and development of vibratory cultivator using optimization algorithms. *SN Applied Sciences*. SCI-2.8, Scopus, ESCI.
6. Rao, G., Chaudhary, H., and Sharma, A.K. (2019). Three and Four Precision Position Graphical and Analytical Synthesis Procedure Mechanism Design for Agricultural Tillage Operation. CRC Press Taylor and Francis. Scopus, ESCI.
7. Rao, G., Kumar, A., Chaudhary, H., and Sharma, A.K. (2019). Design of four-bar mechanism for vibratory tillage cultivator using five precision position method for path generation problem. *International Journal of Environment and Sustainable Development*. Inderscience. SCI-1.1, Scopus.
8. Tripathi, A.K., Aruna, M., Ray S., Rao NRNV., Krishna SV., Nandan D., (2022). Development and Evaluation of Dust Cleaning System for a solar PV Panel. *Journal of Engineering Research*, Kuwait University - Faculty of Engineering and Petroleum. Scopus, SCIE-IF-0.5.
9. Rao, G., Dave, V., Tiwari, G.S. (2022). Wear-resistant nanostructured coating for cultivator reversible shovels. *Journal of Experimental Agriculture International*. NAAS -4.86.
10. Chakraborty, Subir Kumar, A. Subeesh, Kumkum Dubey, Dilip Jat, Narendra Singh Chandel, Rahul Potdar, NRNV Gowripathi Rao, and Deepak Kumar. "Development of an optimally designed real-time automatic citrus fruit grading-sorting machine leveraging computer vision-based adaptive deep learning model." *Engineering Applications of Artificial Intelligence* 120 (2023): 105826. SCIE-IF-7.8.
11. Talati, I., Mishra, P., Shaikh, A., Patel, A., Gowripathi Rao, N. R. N. V., Pathak, V. K., & Singh, R. (2024). Enhancing business by procuring and dispensing items among supply chain members using a multi-objective approach. *International Journal of Modelling and Simulation*, 1-14. SCI-3.1.
12. Shukla, K., Gupta, P., Bhimani J., & Rao, Gowripathi Rao, N. R. N. V., (2024). Effect of Auger Size and Depth of Operation on Bulk Density, Cone Index, Germination of Castor Crop. *Environment Ecology and Conservation*, 30(3), 1294-1299. WoS.
13. Pawase, P.P, Nalawade, S.M, & Rao, Gowripathi Rao, N. R. N. V., (2024). Design and Development of Variable Rate Applicator for on-Target Dispensing of Fertilizer in Agriculture. *Environment Ecology and Conservation*, 30(3), 1283-1293. WoS.
14. Sambharia, J. K., Pathri, B. P., Gowripathi Rao, N. R. N. V., & Unune, D. R. (2024). Experimental investigations into magnetic-assisted vacuumized abrasive finishing setup for finishing internal surfaces. *Innovation and Emerging Technologies*, 11, 2440017. SCI-0.8.
15. Shruthi, N. K., Rao, N. R. N. V., Ravat, V. K., & Yadav, A. K. S. (2025). Integrating NLP in Agritech for Advanced Plant Protection and Production. *Ecology, Environment & Conservation* (0971765X), 31. WoS.

PATENTS

- An Improved Tillage Cultivator- Patent No. 492416
- Automatic Segregation of E-Commerce products with 7DOF Arm Integrated with AI (published). Application No. 202441055892
- Robotic Pick and Place for Warehouse Efficiency (published). Application No. 202441031518
- ECO Forge: The sustainable 3D filament extruder (published). Application No. 202421067595

CONFERENCE PROCEEDINGS

1. Rao, G., Mall, N. K., Chaudhary, H., & Kumar, A. (2019). Design of Four-Bar Mechanism for Transplanting Paddy Seedlings. Available at SSRN 3351776.
2. Yadav, R., Rao, G., Singh, A.K., (2013). Ergonomic evaluation of Power Tiller operated Rotavator, International Symposium on "Bio Energy-Challenges and Opportunities" conducted by ISAE, New Delhi held at Hyderabad.
3. Rao, G., Joshi V., (2014). Green Technology in Infrastructure for sustainable Future, International Conference on Energy and Infrastructure (ICEI-2014), Gandhinagar.
4. Pathak S.V., Rao N.R.N.V., Sikarwar J.S. (2015). Future trends in precision farming with agro robots, National Conference on Automation and Control: Make in India 2015.
5. Vagadia, R., Kadegiy, Hardik., Desai, Prit., Gautam, Anshul., Chaudhary, Himanshu., and Rao, Gowripathi (2021). Development of a mechanism for seed cum fertilizer drill. Materials Today: Proceedings. Scopus.
6. Jangir, A.K., Achera, Narendra., Khandelwal, Saurabh., Gupta, Chirag., Chaudhary, Himanshu., and Rao, Gowripathi. (2021). Improved design and development of crop conveying mechanism in reaper machine. Scopus.
7. Avadhesh, Kumar G., Gowripathi Rao, N.R.N.V., Purti Bilgaiyan, Kavya Shruthi., and Shanmugam Raju. (2023). Role of Artificial Intelligence in Agriculture –A Paradigm shift. Lecture Notes in Networks and Systems, Scopus.
8. Saxena, A., Shruthi, N. K., & Rao, N. G. (2023, November). A Comparative Study of Predicting Mental Distress in Patients via Social Media Interactions: Artificial Intelligence versus Ensemble Machine Learning Approaches. In 2023 International Conference on Communication, Security and Artificial Intelligence (ICCSAI) (pp. 763-768). IEEE.
9. Bilgaiyan, P., Shivhare, N., & Rao, N. G. (2023). Phytoremediation of Wastewater through Implemented Wetland–A Review. In E3S Web of Conferences (Vol. 405, p. 04026). EDP Sciences.
10. Gowripathi Rao, N. R. N. V., & Kavya Shruthi, N. (2024, September). Mechanism Design for Agricultural Machinery Using Kinematic Synthesis Techniques. In International Conference on Material, Machines and Methods for Sustainable Development (pp. 199-205). Cham: Springer Nature Switzerland. Scopus.
11. Lepcha T.P., NRNV Gowripathi Rao1Gowripathi Rao, N. R. N. V. (2025, November). Applications of Artificial Intelligence Technology for Efficient Farm Management in North-Eastern India: Its Status, Scope, and Limitations (pp.231-233): Innovative Agriculture Magazine.
12. Gowripathi Rao, N. R. N. V., Reddy Surendra & Ravat Vikas K. (2026, September). The Manual Cum Solar-Powered Seed Drill, Advances in Sustainable Agriculture (pp. 145-156): Climate Smart Agriculture. Elite Publishing House.

REFERENCES

- Prof. Ajay Kumar Sharma, Vice-Chancellor, MBM University, State Technical University, Air Force Area, Jodhpur, Rajasthan, Email: sharma_ajayk@yahoo.com
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