

DR. MOHANA LAKSHMI J

Associate Professor (E&EE) | Associate Dean (Corporate Affairs) | COO, ME-RIISE Foundation (Sec 8) | COO, TBI-MCE

Strategic Operations • Power Electronics, Drives & IoT • Startup Incubation & Grant Management • Stakeholder Management

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Hassan, Karnataka, India

PROFESSIONAL SUMMARY

- Strategic operations leader with 13+ years across academia, R&D, and industry, currently serving as COO of ME-RIISE Foundation and COO of TBI-MCE (Technology Business Incubator at Malnad College of Engineering).
- As COO, managing a ₹10 Crore project grant from the Government of Karnataka — leading strategic planning, cash-flow analysis, grant management, event execution, and end-to-end operations.
- Authored successful funding proposals to agencies including NAIN 2.0, TBI 2.0, and towards CSR funds — securing multiple grants that fund the institution's innovation and incubation programs.
- Winner of the ELEVATE Grand Finale 2024, securing a ₹21 Lakh grant from the Government of Karnataka.
- Published 16 international journals and presented at 15 international conferences and 1 national conference; holds 3 granted patents and 2 published Indian patents.
- Industry experience as Project Lead developing motor drives for compressor and pump applications; skilled in Altium, LTSpice, MATLAB, Code Composer Studio, and LabVIEW (hardware + firmware).
- Research focus in sensorless vector control of induction motor drives, remote/virtual-reality-based laboratories for engineering education, and sustainable smart-city solutions.

CORE COMPETENCIES

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| • Strategic Planning & Operations Management | • Startup Incubation & Ecosystem Building |
| • Grant & Project Management | • Finance & Cash-Flow Management |
| • Stakeholder & Partnership Management | • Program & Project Management |
| • Power Electronics & Motor Drives | • IoT & Embedded Systems |
| • PCB Design (Altium) | • MATLAB / Simulink / LTSpice |
| • Technical Analysis & Testing | • Communication & Coordination |
| • Team Leadership | • Digital & Technology Proficiency |

EDUCATION

Master of Business Administration (MBA), Finance — Manipal Academy of Higher Education (MAHE), 2026 (9.23 CGPA)

Ph.D. (Doctorate), Electrical Engineering — Visvesvaraya Technological University (VTU), 2019

M.Tech, Electrical Engineering — Malnad College of Engineering, Hassan, 2012 — 85.36% (VTU 1st Rank & Gold Medalist)

B.E., Electrical Engineering — PES College of Engineering, Mandya, 2010 — 72%

WORK EXPERIENCE

Chief Operating Officer (COO), TBI-MCE, Technology Business Incubator, managed by ME-RIISE Foundation
Current

- Lead operations of the Technology Business Incubator at Malnad College of Engineering with a team of 4 members, managing a ₹10 Crore project grant from the Government of Karnataka.
- Drive incubation programs, grant disbursement, deliverable tracking, and startup support across multiple government-funded schemes.

Chief Operating Officer (COO), ME-RIISE Foundation, A Section 8 Company May 2023 – Present

- Lead a team towards strategic planning, cash-flow analysis, event execution, and complete operations management.
- Develop and implement new processes and procedures to improve operational efficiency.
- Analyze data to identify operational trends and opportunities for improvement.
- Coordinate across departments to ensure successful implementation of institutional initiatives.

Associate Professor, Department of E&EE, Malnad College of Engineering, Hassan Nov 2022 – Present

Lead, L&T Technology Services, Mysore Feb 2022 – Oct 2022

- Project Lead for development of motor drives for compressor and pump applications (VFD project).

Assistant Professor (PG & UG), The National Institute of Engineering, Mysore Apr 2021

Assistant Professor (PG & UG), Malnad College of Engineering, Hassan Aug 2016 – Apr 2021

Assistant Professor (UG), A.T.M.E College of Engineering, Mysore Jul 2015 – Aug 2016

Assistant Professor (PG & UG), Malnad College of Engineering, Hassan Sep 2012 – May 2015

PROJECTS MENTORED & FUNDED

- Mentoring 2 innovators under the Rajiv Gandhi Entrepreneurship Programme (RGEF) — funding support of ₹6,65,000.
- Smart Areca Nut Plucking Machine — grant of ₹6,80,000 from MSME under MSME Idea Hackathon 5.0 (Innovative Scheme), 2026.
- AI-Powered Model for Oral Cancer Detection — grant of ₹2,00,000 from New Age Innovation Network (NAIN), Govt. of Karnataka, Dec 2024.
- Automated Machine for Precision Farming — grant of ₹2,00,000 from NAIN, Govt. of Karnataka, Dec 2024.
- Scoot Lite (compact electric scooter) — grant of ₹1,00,000 from NAIN, Govt. of Karnataka, Dec 2024.
- Solar Panel Cleaning Robot — grant of ₹1,00,000 from NAIN, Govt. of Karnataka, Nov 2020.
- Sustainable Agro-Intelligent Systems and Machine-Learning-based oral cavity detection and diagnosis system.

AWARDS & HONORS

- **Winner — “ELEVATE GRAND FINALE 2024”, securing a grant of ₹21 Lakh from the Department of Electronics, IT, BT, S&T, Govt. of Karnataka (Feb 2025).**
- Best Project Guide — “Automated Garden Watering System with Real-time Monitoring”, Malnad College of Engineering, Hassan (2023).
- Spot Award — outstanding contribution to the VFD project, ICP HR, L&T Technology Services (Apr 2022).
- Winner — R10 Product Demo Session for “Labzcon”, R10HTC, IEEE Bangalore Section (Oct 2021).
- International Engineering Educator Certificate — Indo-US Collaboration for Engineering Education (IUCEE), 2021.
- Best Paper Presenter — Third International Conference on Electrical, Electronics, Communication, Computers and Optimization Techniques, GSSSIETW, Mysuru (2018).
- Best Project Guide (B.E.) — “Fabrication of Portable Solar Water Purifier” (2017–18).
- VTU First Rank & Gold Medalist — M.Tech Degree (VTU), 2012.

PATENTS

- **Design Patent (Registered):** "Design No. 413062-001 — **Areca Nut Harvesting Machine.**" Certificate of Registration of Design, Patent Office, Government of India, 30th May 2024.
- **Design Patent (Registered):** "Design No. 413053-001 — **IoT-Based Dentist's X-Ray Machine.**" Certificate of Registration of Design, Patent Office, Government of India, 28th May 2024
- **Indian Patent (Granted) — “Method and System for Performing Experiments in a Remote Laboratory”, 201941041529, April 2021.**
- Indian Patent (Published) — “A Wide Range Compatible Water Flow Meter System for Monitoring Water Wastage”, Indian Patent Journal, Feb 2024.
- Indian Patent (Published) — “System and Method of a Hybrid Control Model for Power Quality Improvement of Wind Energy Conversion System with Unified Power Quality Controller”, Patent Journal No. 202041030781, July 2020.

CERTIFICATIONS

- Internet of Things — Benny Mellon & ISTE (2023).
- **Executive PG Certificate Program in Electric Vehicle Design — IIT Roorkee, 2024**
- Innovation, Business Models and Entrepreneurship — NPTEL (2022).
- Financial Statements 101 — Acumen Academy (2022).
- PCB Designing in Altium Designer — Udemy (2022).
- Artificial Intelligence — Webex by AGIMUS Technologies (2020).
- Introduction to Machine Learning — SWAYAM by NPTEL (2019).
- Electric Vehicles: Part 1 — SWAYAM by NPTEL (2019).
- Entrepreneurial Opportunities (Entrep101X) — edX, University of Adelaide (2019).
- Electric Cars: Technology (eCARSx) — edX, Delft University of Technology (2018).

PROFESSIONAL MEMBERSHIPS

- Senior Member, IEEE — PES, Smart Cities, Smart Grid, Young Professionals, Robotics & Automation (92512636).
- Associate Member, Institution of Engineers India, Mysore Chapter (AM166619-6).
- Life Member, Indian Society for Technical Education, ISTE (LM-110976).
- Life Member, International Association of Engineers, IAENG (170329).

PUBLICATIONS

International Journals (Selected)

1. Gowtham N., Mohana Lakshmi J., Savyasachi G. K., Bukya M. (2025). A novel transformer-less eleven-level inverter with optimized Buck–Boost controller and minimal switch design for grid-connected PV systems. *Automatika*, 66(4), 950–971.
2. AI-Powered Model for Oral Cancer Detection. *IJSREM*, Vol. 09, Issue 02, Feb 2025, ISSN 2582-3930.
3. Automated Harvest Machine for Precision Farming. *IJSREM*, Vol. 09, Issue 02, Feb 2025, ISSN 2582-3930.
4. Sushma N., Suresh H. N., Mohana Lakshmi J., et al. (2024). Experimental investigation on wireless integrated smart system for energy and water resource management in Indian smart cities. *Results in Engineering*, Vol. 23, 102687 (IF 6.0, SCI Q1).
5. Sushma N., Suresh H. N., Mohana Lakshmi J., et al. (2023). A unified metering system deployed for water and energy monitoring in smart city. *IEEE Access*, Vol. 11, pp. 80429–80447 (IF 3.9, SCI Q1).
6. Mohana Lakshmi J., Suresh H. N., Bhaskar M. S., et al. (2021). Real-Time Implementation of Extended Kalman Filter Observer with Improved Speed Estimation for Sensorless Control. *IEEE Access*, pp. 50452–50465 (IF 3.9, SCI Q1).
7. Mohana Lakshmi J., Neethu V. S., Deeksha R., Deshpande R. (2021). Bus Clamped Modulation for Harmonic Minimization in Vector Control of Induction Motor Drives. *IJARET*, 12(1), pp. 760–770 (Scopus).
8. Geetha Kiran A., Mohana Lakshmi J. (2020). Student-Centric Pragmatic Approach to Impart Concepts of Python Applications Programming. *J. of Engineering Education Transformations*, Vol. 34(1), pp. 52–60 (Scopus).
9. Arjun G. T., Jyothi N. S., Mohana Lakshmi J., Neethu V. S. (2018). Simulation of Vector Controlled Adjustable Speed System of Doubly Fed Induction Machine. *IJRITCC*, Vol. 6 (IF 5.75).
10. Arjun G. T., Jyothi N. S., Mohana Lakshmi J. (2018). Vector Control of Induction Motor Using Xilinx System Generator. *IJRET*, Vol. 7(7), pp. 141–149.
11. Mohana Lakshmi J., Geetha Kiran A. (2018). Inculcating Globalization Culture in Young Graduands. *IJREAM*, Vol. 4 (IF 5.86).
12. Geetha Kiran A., Mohana Lakshmi J. (2018). Instigating Research Culture at Institute Level. *IJREAM*, Vol. 4 (IF 5.86).
13. Geetha Kiran A., Mohana Lakshmi J., Nanditha B. R., Swathi H. Y. (2018). Inter-Departmental Student Projects — Challenges and Benefits. *J. of Engineering Education Transformations* (Scopus).
14. Geetha Kiran A., Mohana Lakshmi J., Chandrashekar H. S. (2017). An Empirical Vision for Inspiring Students as a Core Driver to Meet Global Challenges. *J. of Engineering Education Transformations*, Vol. 30(3).
15. Mohana Lakshmi J., Suresh H. N. (2017). A Robust EKF-based Speed Estimator & Fuzzy Optimization Technique for Sensorless Induction Motor Drives. *IJPEDS*, Vol. 8(1), pp. 147–155 (Scopus, Q2).

Book Chapter

1. Mohana Lakshmi J., Varsha K. S. Pai, Suresh H. N. (2018). Non-Linear Speed Estimator and Fuzzy Control for Sensorless IM Drive. *Smart Innovation, Systems and Technologies*, Vol. 79, pp. 307–318, Springer Singapore (Scopus, Q4).

International Conferences

1. Sustainable Solutions: Implementing an IoT-Based Water Leakage Detection System for Urban Water Management in India, Renewable Power for Sustainable Growth (ICRP 2024), Lecture Notes in Electrical Engineering, Vol. 1565, Springer Singapore. https://doi.org/10.1007/978-981-95-2149-4_32
2. Multifunctional Borewell Rescue Robot for Enhanced Child Safety. 2025 International Conference on Computing Technologies & Data Communication (ICCTDC), Hassan, India, 2025, pp. 1–6. DOI: 10.1109/ICCTDC64446.2025.11158883
3. Development of Automated Harvest Machine for Precision Farming of Areca Nut. ICCTDC 2025, Hassan, India, pp. 01–08. DOI: 10.1109/ICCTDC64446.2025.11158830
4. Compact, Foldable and Lightweight Electric Scooter: Scootlite. ICCTDC 2025, Hassan, India, pp. 1–6. DOI: 10.1109/ICCTDC64446.2025.11159059
5. Development of AI Powered Model for Oral Cancer Detection. ICCTDC 2025, Hassan, India, pp. 1–8. DOI: 10.1109/ICCTDC64446.2025.11159023
6. Simulink Design of Optimized Turbo Code for Next-Generation Wireless Networks: A 5G and Beyond Perspective. ICDCECE 2024, Ballari, pp. 1–7.
7. Development of Virtual Reality-based Experimentation of Digital Electronics Laboratory. ICRTEM 2022.
8. Smart Water Flow Meter for Improved Measurement of Water Usage in a Smart City. ICAECT 2022, pp. 1–6.
9. Performance Improvement in Sensorless Vector Control of IM using Bus Clamped PWM. IEEE ICDI3C-2021, Bangalore, pp. 88–92.
10. Accuracy Improvement of Induction Motor Speed Estimation using Improvised Tuning of Extended Kalman Filter Technique. IEEE ICIIS 2018, IIT Ropar, pp. 191–196.
11. Performance Analysis of Five-level Inverter for Hybrid Distribution Generation System. ICEECOT 2018, GSSSIETW, Mysuru.
12. A Double Fuzzy-based Torque Ripple Minimization for DTC Induction Motor Drives. ICIAS 2015, MCE Hassan.
13. DC Bus Voltage Clamp Method to Prevent Overvoltage Failures. ICIAS 2015, MCE Hassan, pp. 21–26.
14. Sensorless Vector Control of Induction Motor Drives. Intl. Symposium on Advances in Power Distribution Engineering, NIE Mysore, 2015.
15. Sensorless Speed Estimation and Vector Control of an Induction Motor Drive using Model Reference Adaptive Control. ICPACE 2015, BNMIT Bangalore (IEEE Digital Library).

National Conference

1. Mohana Lakshmi J., Nithin Kumar, Mohammed Zilfikar, Bhupinson (2020). Enhanced Solar Photovoltaic Based Electric Bike Charging Unit using Cascaded Boost Converter. 6th National Conference on Emerging Trends in Engineering & Technology.

EDITORIAL / REVIEWER ROLES

- Reviewer — IEEE Access (2020–2025).
- Reviewer — IEEE Transactions on Transportation Electrification (2024, 2020).
- Reviewer — Alexandria Engineering Journal (2021); Conference on Power, Energy and Innovations / IEEE Connect (2021).
- Reviewer — ETASR and ECTI Transactions on Electrical Engineering, Electronics & Communications (Scopus, 2019–20).

FACULTY DEVELOPMENT PROGRAMS (RECENT)

- FDP on “Innovation and Design Thinking” — NITK Surathkal (Mar 2025).
- Certification course on Power BI — Coursera (2024).
- FDP on Internet of Things (3 months) — ISTE (2023).
- ATAL FDP on Augmented Reality & Virtual Reality — MANUU Polytechnic, Hyderabad (2021).
- AICTE FDP — Advances in Power Electronics for Smart Grid, Renewable Energy & EV Technology (2020).

STUDENT DEVELOPMENT PROGRAMS (COORDINATED)

- Entrepreneurial Development Programs under ME-RIISE Foundation (2023 – present).
- Workshop — “Beyond Boundaries: Building Circuitry using Machine Learning” (Feb 2023).
- Workshop — “Recent Trends in IoT and its Applications” (Dec 2022).
- Coordinator — Hackathon COVID-19, Ideathon, IEEE PES Day, and B-Plan Challenge for Women (2020).

PERSONAL DETAILS

Date of Birth: 20 March 1989

Languages: Kannada, English, Hindi, Tamil

Address: Haralahalli New Extension, Pandavapura RS Post, Mandya – 571435, Karnataka