

Krishnavamshi Ganduri

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About

- As a PhD candidate in Mechatronics in School of technology at Woxsen University, I am driven to explore the intersections of mechanical, electrical, and computer engineering to create innovative solutions that address real-world challenges. I am seeking opportunities to leverage my strong academic background and research expertise to contribute to cutting-edge technologies in robotics, automation, and artificial intelligence.

Experience

- 2021 – 2025** **Research Assistant**, School of Technology, Woxsen University, Hyderabad.
Topics: Led Research classes and supervised labs on , Full-stack, Auto-cad, Inventor, Fusion 360, Solid-works, 3D printing, Engineering Mathematics, Engineering Drawing, and Micro-processor. Guided student robotics projects, providing technical expertise and support.
- 2020 – 2021** **Design Engineer**, Lyonstone Technologies, Hyderabad.
Utilized ANSYS software for advanced engineering analysis and simulation. Collaborated with a team of engineers to design [Solidworks, Catia] and develop innovative solutions. Conduct feasibility studies & performance evaluations for various projects. Contributed to the creation of detailed design specifications and technical documentation.

Education

- 2021 – 2025** **Ph.D., Woxsen University, Hyd.** Mechatronics.
Thesis title: *Design and simulation of swarm robotics: An innovative approach for path planning and Control Formation*
- 2018 – 2021** **M.Tech., CMR Technical campus, Hyd.** Thermal Engineering. **76%**
Thesis title: *CFD analysis of diesel-methanol blend in 4-stroke variable compression ratio internal combustion engine.*
- 2015 – 2018** **B.Tech., Adams Engineering College Palvoncha**, Mechanical Engineering. **72%**
Thesis title: *Design and analysis of Leaf Spring Using Catia V5 and Ansys Workbench.*
- 2012 – 2015** **Diploma, Govt. Model Residential Polytechnic, Bhadrachalam**, Mechanical Engineering. **74.4%**
Thesis title: *Boiler Maintenance and Control.*

Skills

- Languages** **Strong reading, writing and speaking competencies for English, Telugu and Hindi.**
- Coding** **ROS(Learning), Python, Matlab, L^AT_EX, ...**
- CAD/FEA** **Solidworks, Catia V5, Creo parametric, NX, AUTOCAD-Inventor, Fusion 360, Ansys.**
- Misc.** **Academic research, teaching, training, consultation.**

Achievements and Professional Development

Awards

- 2017 **1st Place**, Innovation of Paper cutting machine using Geneva Mechanism in the PROJECT-EXPO conducted during B Tech 3-1.
- 2013 **1st Place**, Scored 100/100 in Engineering Drawing in Diploma 1st Year and received a prize from RJD-ITDA, Telangana.

Certification

- 2021 **Certified CAD/CAE Engineer**. Awarded by MSME Govt. of India, Balnagar.
- 2015 **Boiler Maintenance and Control**. 6months Industrial Training, KTPS O&M Govt. of Telangana, Palvoncha.

FDP & Workshops

- 24-25 Jan 25 **2-days workshop on Introduction Aerial DRONE Technology Design , Assembly and Application**, Mahindra University, Hyderabad, Telangana.
- 05-18 May 24 **2-week certificate program: IOT practice and theory, Autonomous Systems and Digital Twin: Challenges and Applications**, IIIT Sricity, Andra Pradesh.
- 11-15 Dec 23 **A one week workshop on AI and ROS for Robotics: Theory and Practice**, IIIT Kanchepuram, Tamilnadu.
- 20-22 Jun 23 **Three-Day International FDP on Research Directions in Computer Science & AI - A Multidisciplinary & Practical Perspective**. Woxsen University, Hyderabad, Telangana.
- 13-17 Feb 23 **A one week faculty development program (FDP) on 3D printing and Design**. IIIT Basara, Telangana.

Projects

- 2025 **Swarm Robots**, Developed WOXBOTS, a low-cost swarm robotics platform addressing velocity obstacle handling and collision avoidance using Raspberry Pi, ultrasonic sensors, and N2o motors. Demonstrated applications in autonomous navigation and search-and-rescue.
- 2024 **Disha**, Designed an AI-powered direction assistance system using ESP32, omni wheels, and LUNA sensors for efficient obstacle avoidance and smooth motor control.
 - Pick-and-Place Robot**, Designed and prototyped a warehouse pick-and-place robot using 3D printing, showcasing expertise in warehouse automation.
 - Agriculture Drone**, Built AI-powered drones for crop health monitoring and autonomous navigation, optimizing agricultural yields.
- 2023 **Automatic Segregation Conveyor Belt**, I designed, assembled, and fabricated an automated sorting system using Arduino, color sensors, and servo motors to enhance industrial recycling efficiency.
 - Fire Fighting Drone**, Designed and assembled a firefighting drone with human detection sensors and fire suppression capabilities for emergency applications.
 - 3D-Printed V8 Engine**, Designed, simulated, and 3D printed a V8 engine prototype, optimizing performance through SOLIDWORKS and ANSYS Workbench.
 - Agri-Bot**, Built an autonomous seed-sowing robot, focusing on efficient component integration and sustainable farming practices.

Projects (continued)

- 2020  **CFD Analysis of IC Engine**, Simulated combustion in a diesel-methanol blend IC engine using ANSYS to optimize performance.
- 2018  **Leaf Spring Design**, Enhanced load capacity and reduced stress in leaf springs using CATIA and ANSYS.
- 2017  **Geneva Mechanism Paper Cutter**, Designed and fabricated a paper cutting machine using Geneva mechanism; won 1st prize at a college fest.

Patents

- 2025  **202511051099**: Autonomous Drone for Medical Emergency ,Detection and Delivery
-  **202541035072**: AI-Driven Robotic Pipeline Inspection System with Suction Mechanism
-  **202541019069**: AI-Enhanced Firefighting Drone with Thermal Imaging & First Aid Deployment
-  **202541008847**: Borewell Rescue Device
- 2024  **202441090408**: Multi-Agent Co-ordination system with the ability of swarm behavior implementation
-  **202441067595**: Eco-Forge: The Sustainable 3D Filament Extruder.
-  **202441055892**: Automatic Segregation of E-Commerce Products with 7DOF Arm Integrated with AI.
-  **202441031518**: Robotic pick and place for warehouse efficiency.
-  **202441011568**: A system and method for real-time 3-Dimensional Projection of live matches across multiple Grounds.

Research Publications

Journal Articles

- 1 **Krishna Vamshi Ganduri**, B. P. Pathri, S. Rathod, *et al.*, “Adaptive intelligence in warehouse robotics: Efficient pick-and-place robot for dynamic environments,” *Journal of Electrical Systems*, vol. 20, no. 3, 2025, ISSN: 1112-5209.  DOI: 10.52783/jes.7892.
- 2 **Krishna Vamshi Ganduri** and D. B. P. Pathri, “Swarm intelligence in action: Particle swarm optimization and rendezvous algorithms for swarm robotics,” *Journal of Field Robotics*, 2024.  DOI: 10.1002/rob.22466.

Conference Proceedings

- 1 **Krishna Vamshi G** and B. P. Pathri, “Chromatic metal sorting: Automated conveyor belt,” in *ICSSCGE Conference Proceedings*, Scopus Publishing, vol. 5623, 2024 (**Accepted**).
- 2 B. Prajwal Pathri, V. S. H. Borra, **Ganduri Krishna vamshi**, J. M. C. K. Reddy, M. R. Kantipudi, and M. R. Jupalle, “Smart hostel management through the iot: Reducing energy consumption, securing access, and preventing theft,” in *2024 3rd International Conference on Automation, Computing and Renewable Systems (ICACRS)*, 2024, pp. 483–489.  DOI: 10.1109/ICACRS62842.2024.10841498.
- 3 S. N. Reddy Gottam, B. P. Pathri, **Ganduri Krishna vamshi**, T. L. Venkata Prasanna Sathwik, S. T. Reddy, and V. Vaishnavi, “Ecosprout: Machine learning-powered smart sprinkler system,” in *2024 International Conference on Emerging Smart Computing and Informatics (ESCI)*, 2024, pp. 1–7.  DOI: 10.1109/ESCI59607.2024.10497210.

- 4 K. R. Kumari, D. Maneiah, A. R. Reddy, M. A. A. Baig, and **G Krishna vamshi**, "Cfd analysis of diesel-methanol blend in 4-stroke variable compression ratio internal combustion engine," in *AIP Conference Proceedings*, AIP Publishing, vol. 2358, 2021, p. 050 014.  DOI: 10.1063/5.0058761.

Books and Chapters

- 1 B. P. P. **Ganduri Krishna Vamshi** and P. Sairam, Eds., *Empowering Autonomous Vehicles in Industry 5.0 with Digital Twin Technology*. Hyderabad, Telangana: CRC-Press : Technology developments in computer intelligence and their applications in the era of Industry 5.0, 2025, ISBN: **(Accepted)**.
- 2 B. P. P. **Ganduri Krishna Vamshi** and P. Kumar, Eds., *Redefining V8 Engines with Advanced Sustainable Design, Simulation, and 3d Printing*. Hyderabad, Telangana: AAP-Planning of Sustainable Energy Systems in Urban Built Environments, 2024, ISBN: 9781779640642.
- 3 K. G. Dr. Bhargav Prajwal Pathri, Ed., *Laser based system robots for manufacturing automation content*. Hyderabad, Telangana: ASME, 2023, ISBN: **(Accepted)**.

References

 **Dr. Bhargav Prajwal Pathri,**

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