

Dr. Pandu Ranga Vundavilli

Born on July 25th 1975, G. Ragampet, E.G. Dt, Andhra Pradesh, India

Professor & Dean (Continuing Education)

School of Mechanical Sciences,

IIT Bhubaneswar

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Education Background

Jan 06 – Dec 08: Ph.D in Robotics and Soft Computing, at Department of Mechanical Engineering, **Indian Institute of Technology Kharagpur**, India.

Thesis Title: Gait generation of dynamically balanced biped robots using soft computing.

Thesis Supervisor: Prof. Dilip Kumar Pratihar

Aug 01 – July 03: Master of Technology in Computer Integrated Manufacturing, at **National Institute of Technology Warangal**, A.P, India.

Thesis Title: Optimization of machining parameters for wire cut EDM using genetic algorithms.

Thesis Supervisor: Dr. A. Neelakanteswara Rao

Aug 96 – Nov 00: Bachelor of Technology in Mechanical Engineering, at **Jawaharlal Nehru Technological University College of Engineering, Kakinada**, A.P, India.

Research Interests

- Robotics and soft computing
- Metal Matrix Composites
- Modeling and Simulation of Manufacturing Systems

Subjects Taught

- Computer Control of Machine Tools and Processes (For B.Tech)
- Flexible Manufacturing Systems & Group Technology (For B.Tech)
- Robotics (For B. Tech)
- Mechatronics (For B. Tech)
- CAD/CAM (For B. Tech)
- Automation in Manufacturing (For B. Tech)
- Flexible Manufacturing Systems (For M.Tech)
- Performance Modeling of Automated Manufacturing Systems (For M. Tech)
- Robotics (For M. Tech)
- Computer Integrated Manufacturing (For M. Tech)

Total Work Experience (19 yrs)

Teaching: Sixteen years (16 yrs)

- Working as a Professor in the School of Mechanical Sciences of IIT Bhubaneswar from October 2023 to Till Date.
- Working as an Associate Professor in the School of Mechanical Sciences of IIT Bhubaneswar from July 2019 to October 2023.
- Worked as an Assistant Professor in the School of Mechanical Sciences of IIT Bhubaneswar from June 2013 to July 2019.
- Worked in the Department of Mechanical Engineering of DVR & Dr. HS MIC College of Technology, Kanchikacherla from October 2010 to May 2013.
- Worked in the Department of Mechanical Engineering, Rungta College of Engineering & Technology, Bhilai, from October 2009 to September 2010.
- Worked in the Department of Mechanical Engineering, DVR & Dr. HS MIC College of Technology, Kanchikacherla, from January 2009 to October 2009.
- Worked in the Mechanical and Industrial & Production Engineering Departments of KL College of Engineering, Vaddeswaram, A.P from June 2003 to December 2005.

Research: Three years (3 yrs)

- Worked as a Research Scholar (Ph. D) from January 2006 to Dec 2008, at the Department of Mechanical Engineering, IIT Kharagpur.

Research Guidance

- Guidance of Ph. Ds (04 - under progress + 06 - completed)
- Guidance of postgraduate (M. Tech) projects (18- completed)
- Guidance of undergraduate projects (33 - Completed)

Consultancy

- Consultancy work worth of **Rs. 1,19,600/-** titled “Endorsement of the estimation of production quantities of sponge iron and steel billets of Maa Mahamaya Industries Ltd, R.G. Peta in the years 2006-07, 2007-08 and 2008-09 from the charge mix used”, July 2016 (Project Investigator).
- Consultancy work worth of **Rs. 1,19,080/-** titled “Assessment of quality control systems and equipment of Maa Mahamaya Industries Limited”, R.G. Peta, Vizianagaram Dt, A.P, May 2016 (Project Investigator).
- Consultancy work worth of **Rs. 39,900/-** titled “Survey on Process Study of CPC and EPC of Amritesh Industries Pvt. Ltd”, Angul, June 2015 (Co-PI).
- Consultancy work worth of **Rs. 26,293/-** titled “Survey on Capacity Assessment of Amritesh Industries Pvt. Ltd”, Angul, May 2015 (Project Investigator).

- Consultancy work worth of **Rs. 3, 28, 653/-** titled “Robotic Applications in Boiler NDT Assessment” with OMS Power Training Institute, Bhubaneswar, Jan- March 2015 (Project Investigator).

Patents Filed

- Vipin Kumar and Pandu R Vundavilli, A Multipurpose Leg Configuration for Wall Climbing and Sandy Walking Robot, (Appl. No: 201631016871)
- Vipin Kumar and Pandu R Vundavilli, A Wall Climbing Robot, (Appl. No: 201631016872)

Sponsored Research

- Satish K. Panda, **Pandu R Vundavilli**, Sonakshi Jyrwa (AIIMS, Nagpur), Puja H. Bang (AIIMS, Nagpur), and Suyog Jaiswal (AIIMS, Nagpur), AI-powered tool for autonomous identification of retinal phenotypes as potential diagnostic biomarkers for Schizophrenia spectrum disorders, worth of Rs. 82,19,840/- sponsored by ICMR on 23-04-2024.
- **Pandu R Vundavilli**, M.M. Mahapatra and Pattabhi Ramaiah B, “Design and development of screw drive type wheeled snake robot to access the inaccessible areas inside the boiler tubes and other accessories” worth of Rs. 38,16,000/- sponsored by CPRI on 26-10-2021.
- **Pandu R Vundavilli**, M.K. Pandit and Ashis Biswas, “Load distribution, design and joint configurations for load grounding through human worn exo-frames” worth of Rs. 34,25,000/- sponsored by DIPAS-DRDO on 07-09-2021.
- A Venugopal, Pattabhi Ramaiah B, **Pandu R Vundavilli**, M.K. Pandit and A.K. Pradhan, “Design and Development of compact and lightweight Jet Pumps for Aviation application with enhanced efficiency” worth of Rs. 13,49,490/- sponsored by CTTC Bhubaneswar on 24-09-2020.
- **Pandu R. Vundavilli** and Pattabhi Ramaiah B, “Design and Development of an Industrial Robot Controlled using AG/VR Technology”, worth of Rs. 12.00 Lakhs sponsored VARCoE, IIT Bhubaneswar. (Aug 2018).
- **Pandu R Vundavilli**, M.K. Pandit and Pattabhi Ramaiah B. “Dynamic analysis and design of dynamically balanced gait controller for lower limb exoskeleton”, worth of Rs. 47, 39, 520/- sponsored by DST under SERB-CRG. (March 2019 to March 2022).
- **Pandu R Vundavilli** and S.N. Panigrahi, “Design and development of Unmanned Armed Vehicle”, worth of Rs. 0.60 Lakhs sponsored by Design Innovation Centre, IIT Bhubaneswar. (May 2017 to April 2018).
- Satyanarayana A, Y. Bhumkar, A. Venugopal, K. Sasidhar, M.M. Mahapatra and **Pandu R. Vundavilli**, DST FIST proposal worth of Rs. 285 Lakhs on Design, Manufacturing and Analysis of wings & Aero structures. (Approved: Jan-2017).
- **Pandu R Vundavilli**, “Dynamic walking gait generation and path planning of a biped robot using soft computing”, Worth of Rs. 10 Lakhs Sponsored by

Sponsored Research and Industrial Consultancy, IIT Bhubaneswar. (Dec. 2013 – Dec. 2015).

Honors and Awards

- Keynote speaker at National Conference on Recent Advances in Mechanical Engineering, organized by Andhra University, Visakhapatnam, AP on 11th March 2017.
- Examined and acted as external examiner for the Thesis evaluation of AU in July 2016.
- Examined and acted as external examiner for Thesis evaluation of AU in April 2016.
- Acted as Session chair at the International Conference on Production and Mechanical Engineering (ICPME-2014) held at Bangkok, Thailand on 30 & 31st Dec. 2014.
- Keynote speaker at National Workshop on Analysis, Simulation & Optimization, Organized by Christian College of Engg. & Technology, Bhilai on 15th & 16th Dec. 2014.
- Appointed as external examiner for the Ph. D Viva-Voce examination held at CSVTU, Bhilai, CG (June, 2014).
- Program committee member for the 1st International and 16th National Conference on Machines and Mechanisms (iNaCoMM-2013) organized by Mechanical and Industrial Engineering Department, IIT Roorkee.
- Acted as a resource person for the Hindu education plus career counseling -2012 organized at Siddhartha Academy Auditorium, Vijayawada on 1st July 2012.
- Acted as Judge for the event ‘STRIVE-2K12’ organized by the Department of Mechanical Engineering, Sri Venkateswara Institute of Science & Information Technology (VISIT) on 21st July 2012.
- Best Researcher Award of MIC College of Technology – 2012.
- One of my papers (Fuzzy logic-based expert system for prediction of depth of cut in abrasive water jet machining process) is cited as one of the top 25 downloaded articles in Science Direct, computer science (knowledge-based systems) category from January to March 2012.
- Acted as Judge for the event GECFEST’ 11-12 organized by the Department of Mechanical Engineering, Gudlalleru Engineering College on 17th Feb. 2012.
- Recognized Ph.D. supervisor for JNTUK and JNTUH.
- Appointed as external examiner for the Ph.D Viva-Voce examination held at Jawaharlal Nehru Technological University, Anantapur (2011).
- Acted as Judge for the event “VISHELESHAK” in ConQursO – 2011, organized by the Department of Management Studies, DVR & Dr. HS MIC College of Technology, Kanchikacherla.
- Listed as a distinguished personality in Who’s Who in the World 2011 (28th Edition).

- Acted as Judge for National Symposium (SAPIENCE - 2010) on recent advancements in Mechanical Engineering, organized by Sri Vasavi Institute of Engineering & Technology, Pedana, Krishna Dt, AP, India.
- One of my papers has been cited by a French Magazine.

Publications

International Journals:

1. Dev Singh Chauhan and **Pandu R Vundavilli**, Design of a Computer Vision-Assisted Machine Learning-based Controller for Stewart Platform to Track Spatial Objects, Special Issue on In Frontiers of Structural and Civil Engineering, Nov. 2023.
2. Partha S Sahoo, M.M. Mahapatra, **Pandu R Vundavilli** and Chandan Pandey, Effects of working temperature on microstructure and hardness of Ti-6Al-4V alloy subjected to asymmetrical rolling, Journal of Materials Engineering and Performance, Accepted (March 2023).
3. Priyaranjan Samal, Harihar Tarai, Arabinda Meher, B. Surekha, **Pandu R. Vundavilli**, Effect of SiC and WC reinforcements on microstructural and mechanical characteristics of Copper alloy-based metal matrix composites using stir casting route, Applied Sciences, Vol. 13, 1754, Jan 2023.
4. Hrudaya J.B, **Pandu R Vundavilli**, K. Mondal, N.P. Shetti and A Gupta, ZnO/CuO nanostructures anchored over Ni/Cu tubular films via pulse electrodeposition for photocatalytic and antibacterial applications, Material Science for Energy Technologies, Vol. 6, Jan 2023, pp. 237-251.
5. P.G. Rao, **Pandu R Vundavilli** and Ravi Kumar Madava, Tribological Behaviour of Al6061/Gr/WC Hybrid MMC's using Multi-Response Optimization, International Journal of Mathematical Modeling and Numerical Optimization, Vol. 13, No. 2, 2023, pp. 123-146.
6. K. Srinivas, **Pandu R Vundavilli** and M.M. Hussain, Experimental investigation on microstructural characterization and mechanical properties of plasma arc welded Inconel 617 plates, High-Temperature Materials and Processes, Vol. 41, pp. 683-693, Dec. 2022.
7. V.S. Varma, R. Yogeswara Rao, **Pandu R Vundavilli**, M.K. Pandit and P.R. Budarapu, A Machine Learning-based Approach for the Design of Lower Limb Exoskeleton, International Journal of Computational Methods, Vol. 19, No. 8, 2022, pp. 2142012_1_22.
8. Jishnu A K, Dev Singh Chauhan and **Pandu R Vundavilli**, Design of neural network based adaptive inverse dynamics controller for motion control of stewart platform, International Journal of Computational Methods, Vol. 19, No. 8, 2022, pp. 2142010_1_35.
9. Dev Singh Chauhan and **Pandu R Vundavilli**, Forward kinematics of the stewart parallel manipulator using machine learning, International Journal of Computational Methods, Vol. 19, No. 8, 2022, pp. 2142009_1_22.

10. A. Meher, M.M. Mahapatra, P. Samal, **Pandu R. Vundavilli** and K.V. Shankar, Statistical modeling on machinability of RZ5/TiB2 in-situ magnesium matrix composite in dry turning condition, *Crystals*, Vol. 12, No.10, 1353, Sept. 2022.
11. Hrudaya J.B, **Pandu R Vundavilli** and A Gupta, Facile Fabrication of Hydrophobic ZnO Nanostructured Nickel Microtubes through Pulse Electrodeposition as Promising Photocatalyst for Wastewater Remediation, *Journal of Manufacturing Processes*, Vol. 75, pp. 538-551, 2022.
12. Deepak Parappagoudar, Ravi Kumar Mandava, **Pandu R Vundavilli** and Balaji Betadur, An Efficient Path Planning Algorithm for the Biped Robot in a Static Environment using Fast Sweeping Method, *Proc. of IMech E, Part C: Journal of Mechanical Engineering Science*, Vol. 236, No. 13, pp. 7417-7425, 2022.
13. A. Meher, M.M. Mahapatra, P. Samal and **Pandu R. Vundavilli**, A review on manufacturability of magnesium matrix composites: Processing, tribology, joining and machining, *CIRP Journal of Manufacturing Science and Technology*, Vol. 39, pp. 134-158, 2022.
14. Hrudaya J.B, Jaskaran Jot kaur, **Pandu R Vundavilli** and Ankur Gupta, Recent advances in energy field assisted hybrid electrodeposition and electroforming processes, *CIRP Journal of Manufacturing Science and Technology*, Vol. 38, pp. 518-546, 2022.
15. P. Samal, B. Surekha and **Pandu R. Vundavilli**, Experimental investigations on microstructure, mechanical behavior and tribological analysis of AA5154/SiC composites by stir casting, *Silicon*, Vol. 14, pp. 3317-3328, May 2022.
16. P. Samal, **Pandu R. Vundavilli**, Arabinda Mehar and M.M. Mahapatra, Multi-Response Modeling for Sliding Wear Behavior of AA5052/TiC Composites by Stir Casting: A Comparative Analysis using Response Surface Methodology and Fuzzy Logic System, *Proc. of IMechE- Part E: Journal of Process Mechanical Engineering*, Vol. 236, No. 2, pp. 254-266, April 2022.
17. P. Samal, **Pandu R. Vundavilli**, Arabinda Mehar and M.M. Mahapatra, Reinforcing effect of multi-walled carbon nanotubes on microstructure and mechanical behavior of AA5052 composites assisted by in-situ TiC particles, *Ceramics International*, Vol. 48, No. 6, pp. 8245-8257, March 2022.
18. Aniket Das, **Pandu R. Vundavilli**, B. Surekha and V. Srinivasa Sai, Experimental investigations on the electrodeposition of Ni on copper substrate, *International Journal of Manufacturing Technology and Management*, Vol. 35, No. 5, pp. 443-454, March 2022.
19. Vijay Kumar G, S.K. Parashar, S. Klykov, Pandu R Vundavilli, S. Sevda, S.K. Srivastava and M.J. Taherzadeh, Invasive weed optimization coupled biomass and product dynamics of tuning soybean husk towards lipolytic enzyme, *Bioresource Technology*, 344, 2022, 126254.
20. S. Pradhan, Ravi Kumar M and **Pandu R. Vundavilli**, Development of path planning algorithm for biped robot using combined multi-point RRT and visibility graph, *Int. J. inf. Technol*, Vol. 13, pp. 1513-1519, 2021.
21. Ravi Kumar Mandava and **Pandu R. Vundavilli**, Design and development of an adaptive torque-based proportional-integral-derivative controller for a two-legged robot, *Soft Computing*, Vol. 25, No. 9, pp. 10953-10968, 2021.

22. P. Samal, D. Mani Babu, S. Venkat Kiran, B. Surekha, **Pandu R. Vundavilli**, and Animesh Mandal, Study of microstructural and machining characteristics of hypereutectic Al-Si alloys using Wire-EDM for photovoltaic application, *Silicon*, Vol. 13, pp. 4407-4419, 2021.
23. A. Meher, M.M. Mahapatra, P. Samal and **Pandu R. Vundavilli**, Abrasive wear behaviour of TiB₂ reinforced in-situ synthesized magnesium RZ5 alloy based metal matrix composites, *Metals and Materials International*, Vol. 27, pp. 3652-3665, 2021.
24. Abhishek M Chheda, Ravi Kumar M and **Pandu R Vundavilli**, Design and development of two-wheeled self-balancing robot and its controller, *Int. Journal of Mechatronics and Automation*, Vol. 8, No.1, pp. 1-8, Mar 2021.
25. Hrudaya J.B., P. Rout, **Pandu R Vundavilli** and A Gupta, Laser-assisted micro hole fabrication in a flexible polymer substrate, *lasers in Engineering*, Vol. 49, No. 1-3, pp. 3-20, Mar 2021.
26. Hrudaya J.B, A. Yadav, Pandu R Vundavilli and Ankur Gupta, High aspect ZnO nanorod growth over electrodeposited tubes for photocatalytic degradation of EtBr dye, *Royal Society of Chemistry (RSC) advances*, Vol. 11, No. 3, pp. 1623-1534, Jan 2021.
27. Hrudaya J.B, Pandu R Vundavilli and Ankur Gupta, Perspective – Electrodeposition of graphene reinforced metal matrix composites for enhanced mechanical and physical properties: A review, *Journal of the Electrochemical Society*, Vol. 167, pp. 146501, Dec. 2020.
28. P. Samal, **Pandu R. Vundavilli**, Arabinda Mehar and M.M. Mahapatra, Recent progress in aluminum metal matrix composites: a review on processing, mechanical and wear properties, *Journal of Manufacturing Processes*, Vol. 59, pp. 131-152, November 2020.
29. A. Meher, M.M. Mahapatra, P. Samal and **Pandu R. Vundavilli**, Study on effect of TiB₂ reinforcement on the microstructural and mechanical properties of magnesium RZ5 alloy based metal matrix composites, *Journal of Magnesium and Alloys*, Vol. 8, No. 3, pp. 780-792, Sept. 2020.
30. A.K Shettigar, G.C.M Patel, G.R Chate, **Pandu R. Vundavilli**, MB Parappagoudar, Artificial bee colony, genetic, back propagation and recurrent neural networks for developing intelligent system of turning process, *SN applied Sciences*, Vol. 2, No. 4, pp. 1-21, 2020
31. P. Samal, Ravi Kumar Mandava and **Pandu R. Vundavilli**, Dry sliding wear behavior of Al6082 metal matrix composites reinforced with red mud particles, *SN applied Sciences*, Vol. 2, No. 2, pg. 313, Jan 2020.
32. Ravi Kumar Mandava and **Pandu R. Vundavilli**, An analytical approach for generating balanced gaits of a biped robot on stairs and slopping surfaces, *International Journal of Modeling Identification and Control*, Vol. 33, No. 1, pp. 28-50, Nov. 2019.
33. K. Srinivas, **Pandu R. Vundavilli** and M.M. Hussain, Non-linear modeling of mechanical properties of plasma arc welded Inconel 617 plates, *Materials Testing*, Vol. 61, No. 8, pp. 770-778, Aug. 2019.

34. Ravi Kumar Mandava and **Pandu R. Vundavilli**, An Adaptive PID Control Algorithm for the Two Legged Robot Walking on a Slope, *Neural Computing and Applications*, Vol. 32, pp. 3407-3421, 2020.
35. Ravi Kumar Mandava and **Pandu R. Vundavilli**, An analytical approach for generating balanced gaits of a biped robot on stairs and slopping surfaces, *International Journal of Modeling Identification and Control*, Vol. 33, No. 1, pp. 28-50, 2019.
36. Ravi Kumar Mandava, K. Mrudul and **Pandu R. Vundavilli**, Dynamic motion planning algorithm for a biped robot using fast marching method hybridized with regression search, *Acta Polytechnica Hungarica, Journal of Applied Science*, Vol. 16, No. 1, pp. 189-208, Mar. 2019. (IF: 1.286)
37. Ravi Kumar Mandava and **Pandu R. Vundavilli**, An optimal PID controller for a biped robot walking on flat terrain using MCIWO algorithm, *Evolutionary Intelligence*, Vol. 12, No. 1, pp. 33-48, Mar. 2019.
38. P.K. Behera, Ravi Kumar M and **Pandu R. Vundavilli**, Push recovery system and balancing of a biped robot on steadily increasing slope of an inclined plane, *International Journal of Computational Vision and Robotics*, Vol. 9, No. 1, pp. 70-79, Feb. 2019
39. Ravi Kumar Mandava, K. Mrudul and **Pandu R. Vundavilli**, Application of hybrid fast marching method to determine the real time for the biped robot, *Journal of Intelligent Service Robotics*, Vol. 12, No. 1, pp. 125-136, Jan. 2019. (IF: 1.286)
40. Ravi Kumar Mandava and **Pandu R. Vundavilli**, Near optimal PID controllers for the biped robot while walking on uneven terrains, *International Journal of Automation and Computing*, Vol. 15, No. 6, pp. 689-706, Nov. 2018.
41. P. Gangadhara Rao, A. Gopalakrishna and Pandu R. Vundavilli, Response surface methodology based modeling of friction-wear behavior of Al6061/9%Gr/WC hybrid MMCs and its optimization using Fuzzy GRA, *Transactions of the Indian Institute of Metals*, Vol. 71, No. 10, pp. 2465-2478, 2018. (IF: 1.176)
42. Ravi Kumar Mandava and **Pandu R. Vundavilli**, Implementation of modified chaotic invasive weed optimization algorithm for optimizing the PID controller of the biped robot, *Sadhana*, Vol. 43, No. 3, pp. 1-18, 2018. (IF: 0.769)
43. Ravi Kumar Mandava and **Pandu R. Vundavilli**, Whole body motion generation of 18-DOF biped robot on flat surface during SSP and DSP, *International Journal of Modeling Identification and Control*, Vol. 29, No. 3, pp. 266-277, 2018.
44. S. Deepak Kumar, Pandu R Vundavilli, A. Mandal, S. Mantry and M. Chakraborty, Erosion response of thixoformed A356-5TiB₂ in-situ composite using Taguchi's experimental design, *Tribology Transactions*, Vol. 60, No. 1, pp. 39-46, Jan 2017. (IF: 1.723)
45. G.C. Manjunath Patel, Prasad Krishna, **Pandu R Vundavilli** and M.B. Parappagoudar, Multi-objective optimization of squeeze casting process using genetic algorithm and particle swarm optimization, *Archives in Foundry Engineering*, Vol. 16, No. 3, pp. 172-186, Nov. 2016. (IF: 0.42)
46. D. Mani Babu, S. Venkat Kiran, **Pandu R. Vundavilli** and A. Mondal, Experimental investigations and multi response optimization of wire electric

- discharge machining of hypereutectic Al-Si alloys, *International Journal of Manufacturing Research*, Vol. 11, No. 3, pp. 221-237, Oct 2016.
47. Akash Deep Chhabra, R. Vinod Kumar, Pandu R Vundavilli and B. Surekha, Design and analysis of higher order exponential horn profiles for ultrasonic machining, *Journal for Manufacturing Science and Production*, Vol. 16, No.1 pp. 13-19, Jan-Mar 2016.
 48. Manjunath Patel, G.C. Prasad Krishna, **Pandu R. Vundavilli** and M.B. Parappagoudar, Multi-objective optimization of squeeze casting process using evolutionary algorithms, *International Journal of Swarm Intelligent Research*, Vol. 7, No. 1, pp. 55-74, Jan-Mar, 2016.
 49. **Pandu R. Vundavilli**, J. Phani Kumar, Ch. Sai Priyatham and Mahesh B. Parappagoudar, Neural network-based expert system for modeling of tube spinning process, *Neural Computing and Applications*, Vol. 26, No. 6, pp. 1481-1493, Aug 2015. **(IF: 4.664)**
 50. K. Shanmukhi, **Pandu R. Vundavilli** and B. Surekha, Modeling of ECDM micro drilling process using GA and PSO trained radial basis function neural network, *Soft Computing*, Vol. 19, No. 8, pp. 2193-2202, Aug 2015. **(IF: 2.784)**
 51. **Pandu R. Vundavilli**, B. Surekha and Mahesh B. Parappagoudar, ABC and GA optimized NN to model resin bonded mould/core sand system: A soft computing-based approach, *Journal of Manufacturing Science and Production*, Vol. 14, No. 4, pp. 257-267, November 2014.
 52. **Pandu R. Vundavilli**, J. Phani Kumar and B. Surekha, Near-optimal prediction of geometrical requirements of injection moulded parts using mamdani-based fuzzy logic controller, *International Journal of Manufacturing Research*, Vol. 9, No. 3, Aug. 2014, pp. 276-293.
 53. B. Surekha, D. Hanumantha Rao, G. Krishna Mohana Rao, **Pandu R. Vundavilli** and Mahesh B. Parappagoudar, Application of response surface methodology for modeling the properties of chromite-based resin bonded sand cores, *International Journal of Mechanics*, Vol. 7, No. 4, pp. 443-458, Oct. 2013.
 54. G. Vijay Kumar, **Pandu R. Vundavilli** and Rintu Benerjee, Enhanced lipage recovery through RSM integrated differential evolution approach from the fermented biomass, *Brazilian Archives of Biology and Technology*, Vol. 56, No. 5, pp. 699-709, Sept-Oct 2013.
 55. B. Surekha, D. Hanumantha Rao, G. Krishna Mohana Rao, **Pandu R. Vundavilli** and Mahesh B. Parappagoudar, Prediction of resin bonded sand core properties using fuzzy logic, *Journal of Intelligent and Fuzzy Systems*, Vol. 25, pp. 595-604, June 2013.
 56. **Pandu R. Vundavilli**, J. Phani Kumar and M. Srinivasa Rao, Evolutionary and swarm-based optimization of turning of GFRP composites using PCD tooling, *Academic Journal of Manufacturing Engineering*, Vol. 11, No. 1, pp. 125-130, March 2013.
 57. B. Surekha, **Pandu R. Vundavilli** and M.B. Parappagoudar, "Forward and reverse mappings of the cement bonded sand mould system using fuzzy logic", *International Journal of Advanced Manufacturing Technology*, Vol. 61, No. 9-12, pp. 843-854, August 2012.

58. B. Surekha, D. Hanumantha Rao, G. Krishna Mohana Rao, **Pandu R Vundavilli** and M. B. Parappagoudar, Modeling and analysis of resin bonded sand mould system using design of experiments and central composite design, *Journal for Manufacturing Science and Production*, Vol. 12, No. 1, pp. 31-50, April 2012.
59. B. Surekha, **Pandu R. Vundavilli** and M.B. Parappagoudar “Reverse modeling of green sand mould systems using fuzzy logic-based approaches”, *Journal for Manufacturing Science and Production*, Vol. 12, No. 1, pp. 1-16, April 2012.
60. **Pandu R. Vundavilli**, M.B. Parappagoudar, K. Shyam Prasad and B. Surekha, Fuzzy logic based expert system for prediction of depth of cut in abrasive water jet machining process, *Knowledge Based Systems*, Vol. 27, pp. 456-464, March 2012.
61. B. Surekha, Lalith K. Kaushik, Abhishek K. Pandey and **Pandu R. Vundavilli**, “Multi-objective optimization of green sand mould system using evolutionary algorithms”, *International Journal of Advanced Manufacturing Technology*, Vol. 58, No. 1-4, pp. 9-17, Jan. 2012.
62. B. Surekha, **Pandu R. Vundavilli**, R.P. Bhat and M.B. Parappagoudar, “Forward and reverse mappings in metal casting – A step towards quality casting and automation”, *AFS Transactions – American Foundry Society*, Vol. 119, 2011, pp. 19-34.
63. **Pandu R. Vundavilli**, and D.K. Pratihari, “Balanced gait generations of a two-legged robot on sloping surface”, *Sadhana- Academy proceedings in Engineering Science*, Vol. 36, No. 4, pp. 525-550, August 2011.
64. B. Surekha, **Pandu R. Vundavilli**, M.B. Parappagoudar and A. Srinath, “Design of genetic-fuzzy system for forward and reverse mapping of green sand mould system”, *International Journal of Cast Metal Research*, Vol. 24, No. 1, (2011), pp. 53-64.
65. **Pandu R. Vundavilli**, and D.K. Pratihari, “Near-optimal gait generations of a two-legged robot on rough terrains using soft computing”, *Robotics and Computer Integrated Manufacturing*. Vol. 27, No. 3, (2011), pp. 512-530.
66. **Pandu R. Vundavilli**, and D.K. Pratihari, “Dynamically balanced optimal gaits of a ditch-crossing biped robot”, *Robotics and Autonomous Systems*, Vol. 58, (2010) pp. 349-361.
67. Vijay Kumar, G, **Pandu R, Vundavilli** and Rintu, B, “Evaluation of lipase production by genetic algorithm and particle swarm optimization and their comparative study”, *Journal of Applied Biochemistry and Bio Technology* Vol. 162, No. 5, (2010), pp. 1350-1361. (DOI 10.1007/s12010-009-8895-2).
68. A. Subba Rao, **Pandu R. Vundavilli** and D.K. Pratihari, “Adaptive vs. conventional potential field approaches for solving navigation problems of a real car-like wheeled robot”, *International Journal of Intelligent Defence Support Systems*, Vol. 2, No. 4, (2009), pp. 290-318.
69. **Pandu R. Vundavilli**, and D.K. Pratihari, “Soft computing-based gait planners for a dynamically balanced biped robot negotiating sloping surfaces”, *Applied Soft Computing*, Vol. 9, No. 1 (2009), pp. 191-208.
70. **Pandu R. Vundavilli**, and D.K. Pratihari, “Inverse dynamics learned gait planner for two-legged robot moving on uneven terrains using neural networks”,

- International Journal of Advanced Intelligence Paradigms, Vol. 1, No. 1 (2008), pp. 80-109.
71. **Pandu R. Vundavilli**, S.K. Sahu and D.K. Pratihari, "Online Dynamically balanced ascending and descending gait generations of a biped using soft computing", International Journal of Humanoid Robotics, Vol. 4, No. 4 (2007), pp. 777-814.
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Book Chapter: (International)

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- 112.R. Satish Babu, **Pandu R. Vundavilli** and M. Lakshmi Narasu, Optimization of α -Amylase production from *Aspergillus Niger* using spoiled starch rich vegetables by response surface methodology and genetic algorithm, IEEE INDICON 2011, BITS Hyderabad, Dec 16th to 18th 2011, Hyderabad, (DOI: 10.1109/INDCON.2011.6139617).
- 113.G. Vijay Kumar, Rintu B and **Pandu R. Vundavilli**, Integration of RSM model for optimization of immobilized lipase mediated solvent free synthesis of flavor ester by genetic algorithm, IEEE International Conference on Image Information Processing, Organized by Jaypee University of Information Technology, Shimla, H.P, India, Nov, 3-5, 2011, (DOI: 10.1109/ICIIP.2011.6108936).
- 114.**Pandu R. Vundavilli**, Ch. Swetha, B. Swathi, K.M.V. Ravi Teja, K. Pratap and T.V. Ranganath, Fuzzy logic-based modeling of abrasive water jet machining process, International Conference on Advances in Engineering and Technology, Organized by E.G.S. Pillay Engineering College, On 27 & 28th May 2011. (Presented by my students).
- 115.Y.S. Rao, C.S.P. Rao, G. Rangajanardhan and **Pandu. R. Vundavilli**, "Simultaneous tolerance synthesis for manufacturing and quality using GA and PSO", Fourth International Conference on Information Processing (ICIP-2010), 06-08 August 2010, pp. 132-138, Bangalore, India (Published by: IK International Publishing House, New Delhi, India).
- 116.S. Ramarao, CRM Sravan, **Pandu R. Vundavilli** and G. Padmanabhan, "Fuzzy logic-based forward modeling of electro chemical machining process", Accepted by *International Symposium on Innovations in Natural Computing (INC-2009)*, Dce 12-13, 2009, Cochin, India. Published in *IEEE proceedings of the World Congress on Nature and Biologically Inspired Computing (NaBIC'09)*, December 09-11, 2009, pp. 1431-1435, Coimbatore, India.
- 117.P. Shrivastava, **Pandu R. Vundavilli** and D.K. Pratihari, "An approach to 3D reconstruction of environment using stereo-vision system", *IEEE Region 10 Colloquium and International Conference on Industrial and Information Systems (ICIIS-2008)*, Dec 8-11, 2008, IIT Kharagpur, India. (DOI: 10.1109/ICIINFS.2008.4798358).
- 118.Tushar, **Pandu R. Vundavilli** and D.K. Pratihari, "Dynamically balanced staircase ascending gait generation of a biped robot", *IEEE Region 10 Colloquium and International Conference on Industrial and Information Systems (ICIIS-2008)*, Dec 8-11, 2008, IIT Kharagpur, India. (DOI: 10.1109/ICIINFS.2008.4798359).
- 119.**Pandu R. Vundavilli** and D.K. Pratihari, "Ditch-crossing gait generation of a two-legged robot using soft computing", *Third Innovative Conference on Embedded systems, Mobile Communication and Computing (ICEMC²-2008)*, Infosys, Mysore, India, August 11-14, 2008, pp. 237-245.
- 120.B. Surekha, **Pandu R. Vundavilli**, "Modeling and optimization of abrasive flow machining using soft computing", in *Proc. of International Conference on Recent Advances in Materials, Processing and Characterization (RAM – 2008)*, V. R. Siddartha Engineering College, Vijayawada, India, 3rd to 4th July 2008, pp. 246-252.

National Journals

121. B. Surekha, M.B. Parappagoudar, **Pandu R. Vundavilli** and A. Jagadeesh, Modeling of cement bonded sand mould system using fuzzy logic, *CSVTU Research Journal*, Vol. 6, pp. 47-50, 2013.
122. **Pandu R. Vundavilli**, A. Jagadeesh and C.V.S. Rao, "Prediction of flank wear in drilling using differential evolution trained neural networks", *Journal of Mechanical Engineering*, Vol. 6, No. 1, March 2011, pp. 24-29.

National Conference:

123. B. Surekha, **Pandu R. Vundavilli**, Mahesh B. Parappagoudar and B. Mayuri. "Fuzzy logic-based modeling of high speed finish milling process", in *Proc. Of All India Conference on the latest trends and developments in Mechanical Engineering & Mechatronics Engineering (AICON - 2010)*, Chhatrapati Shivaji Institute of Technology, Durg, India, 22nd to 24th Jan 2010, pp. 56-65.
124. B. Surekha, **Pandu R. Vundavilli**, "Optimization of high-speed finish milling operation using Genetic-Neural system", in *Proc. of National Conference on Advances in Mechanical Engineering (NCAME - 2008)*, P.V.P.S.I.T and V.R.S.E.C, Vijayawada, India, 11th and 12th Jan 2008.

Workshops and Training Programs Attended

- Attended one day "**Manufacturing Today – Reinventing the Future**" summit Organized by ITP Publishing India Pvt. Ltd. in association with IIT Bhubaneswar on 22nd Sept. 2015.
- Attended one-week **SERB-DST Summer School on Robotics** Organized by IIIT Allahabad, UP from 07th to 13th June 2014.
- Attended a two-day **Mission 10X** certification workshop conducted by Wipro Technologies, Bangalore at MIC College of Technology, Kanchikacherla, AP on 12th and 13th October 2011.
- Attended a five-day faculty empowerment program **Mission 10X** conducted by Wipro Technologies, Bangalore at MIC College of Technology, Kanchikacherla, AP from 1 to 5th August 2011.
- Attended a three-day national symposium and workshop on "**Planar Parallel Robots and Mechanisms**" Organized by the Department of Mechanical Engineering, Rungta College of Engineering & Technology, Bhilai, CG from 9 to 11th Jan 2010.
- Attended a one-day national Conference on "**Nanoscience and Nanotechnology**" Organized by the Basic Science & Engineering Department, Rungta College of Engineering & Technology, Bhilai, CG on Nov 14th 2009.
- Attended a three-day Silver Jubilee Workshop on "**Introduction to Geometric Algorithms**" Conducted by Dept. of Computer Science and Engineering, IIT Kharagpur from Oct 31st to Nov 02nd 2008.

- Attended a one-week “**Technical Teachers Training Program**” Conducted by NITTTR Chennai and organized by KL College of Engineering, Vaddeswaram, A.P from 16th to 21st May 2005.
- Attended a three-day National workshop on “**Simulation of Manufacturing Systems**” conducted by NIT Warangal from 7th to 9th October 2004.

Workshops Organized

- Organized a two-day robotic workshop named “**ROBOTRYST-2012**” conducted by Robosapiens Technologies and E-Cell of IIT Kharagpur on 10th and 11th October 2011 at DVR & Dr. HS MIC College of Technology, Kanchikacherla.

Professional Activities

- Delivered a lecture on “**Application of Genetic-Fuzzy System to an Engineering Problem**” in two-day national seminar sponsored by DST on “**Applications of Soft Computing Tools in Mechanical Engineering**” and organized by VR Siddartha College of Engineering, Vijayawada, India on 28th and 29th January 2008.
- Delivered a lecture on “**Application of Soft Computing in the field of Robotics**” in two-day national seminar sponsored by DST on “**Applications of Soft Computing Tools in Mechanical Engineering**” and organized by VR Siddartha College of Engineering, Vijayawada, India on 28th and 29th January 2008.
- Delivered a lecture on “**Applications of Genetic Algorithms in Mechanical Engineering**” at QIS College of Engineering & Technology, Ongole on 12th March 2011.
- Delivered a lecture on “**Fundamentals and Applications of Robots**” at Chhatrapati Shivaji Institute of Technology, Durg, CG on 26 & 27th March 2011.
- Acted as Resourse person on “**Soft Computing Techniques**” at Two-day National Workshop organized by Narasaraopeta Engineering College (NEC), Narasaraopeta on 4th and 5th March 2012.
- Reviewer for many International Journals in the area of Robotics, Manufacturing and Soft Computing.

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