Dr. Vikash Kumar Agrawal

Curriculum Vitae

Info

Name	-	Dr. Vikash Kumar Agrawal
Date of Birth	-	22nd August, 1983
E-mail ID	-	vikash.agrawal2208@gmail.com
ORCID ID	-	0009-0004-2724-5152
Scopus Link		https://www.scopus.com/authid/detail.uri?authorId=58088247800
Google Scholar		https://scholar.google.com/citations?user=bkC3xbIAAAAJ&hl=en
Linkedin		https://www.linkedin.com/in/dr-vikash-agrawal-7548202a5/
Web of Science		https://www.webofscience.com/wos/author/record/73625815
BCUD ID	-	52082300297
Contact No.	-	+919323576445
Gender	-	Male
Marital Status	-	Married
Nationality	-	Indian
Current Address		-D1-8, (2nd Floor) Green Fields Society, Ajmera, Pimpri, Pune- 411018.

Professional Objective

To work in an institute where I can learn and give best of my knowledge and skills as a professor/ researcher/ administrator and also where I will be given challenges to best of my potential.

Research Interest

Computational Fluid Dynamics, Automobile, Machine Learning, Artificial Intelligence, Optimization Algorithm, Artificial Neural Network, Data Science.

Academic Qualification

2018-2024 - Ph.D.(Mechanical)(CFD/Machine Learning)
Veermata Jijabai Technological Institute (VJTI),
Matunga, Mumbai.

2006-2008 - M.Tech.(Mechanical)(Automobile Engineering)
Veermata Jijabai Technological Institute (VJTI),
Matunga, Mumbai.
CGPA- 6.0

2001-2005 - B.E.(Mechanical Engineering)
C.S.I.T., Durg, Chhattisgarh
Pt. Ravishankar Shukla University, Raipur, C.G.
Percentage- 73.33%

Award & Achievements

- Devdan Rahiya Adarsh Shikshak Puraskar – 2025

- **Jeevan Gaurav Award:** Shri Umrao Bapu Rathod (Retired Headmaster, Agalgav, Tal. Kavthemahankal, Dist. Sangli)
- **Awardee:** Dr. Vikash Kumar Agrawal (Dr. D. Y. Patil Institute of Technology, Pimpri, Pune)

- Qualified **GATE** (Mechanical Engineering) in 2006 with 95 percentile.
- Qualified **GATE** (Mechanical Engineering) in 2017 with 90 percentile.

Ph.D. Thesis Detail

Title - Transient Thermal Analysis of Automotive Disc Brake Using Computational Fluid Dynamics.

Name of Supervisor - Dr. H. P. Khairnar (Assistant Professor), Department of Mechanical Engineering, Veermata Jijabai Technological Institute (VJTI), Matunga, Mumbai.

M.Tech. Thesis Detail

Title - Simulation and Study of Carry under Phenomena in Gas Driven LBE ADS Target Module Using CFD Software (FLUENT & ANSYS CFX) (Sponsored by "Babha Atomic Research Center (BARC), Mankhurd, Mumbai")

Name of Supervisor - Dr. Prasanna Nambiar (Assistant Professor), Department of Mechanical Engineering, Veermata Jijabai Technological Institute (VJTI), Matunga, Mumbai.
Mr. Siddhartha Pal (Babha Atomic Research Center (BARC), Mankhurd, Mumbai)

B.E. Project Detail

Title - Design of a Heavy-Duty Disc Brake System for Commercial Trucks.

Name of Supervisor - Dr. Santosh Sharma (Professor), Department of Mechanical Engineering, Pt. Ravishankar Shukla University, Raipur, C.G.

Work Experience

- **Total Experience: 17.5 Years** (16.5 Years Academic & 01 Year Industrial)

1. Associate Professor, Department of Automation and Robotics, Dr. D. Y. Patil Institute of Technology, Pimpri, Pune, Maharashtra. (1st July 2025- till date).
2. Assistant Professor, Department of Automation and Robotics, Dr. D. Y. Patil Institute of Technology, Pimpri, Pune, Maharashtra. (1st July 2023- 30th June 2025).
3. Python Developer, Entellisoft IT Solution Ltd, Mumbai, Maharashtra. (11th April 2022- 30th June 2023).
4. Assistant Professor, Department of Mechanical Engineering, Shree L. R. Tiwari College of Engineering, Mira road, Mumbai, Maharashtra. (4th June 2016- 8th April 2022).
5. Assistant Professor, Department of Mechanical Engineering, Veermata Jijabai Technological, Matunga, Mumbai, Maharashtra. (1st July 2015- 31st May 2016).
6. Assistant Professor, Department of Mechanical Engineering, Veermata Jijabai Technological, Matunga, Mumbai, Maharashtra. (4th August 2014- 10th June 2015).
7. Assistant Professor, Department of Mechanical Engineering, Rizvi College of Engineering, Bandra, Mumbai, Maharashtra. (21st July 2008- 16th June 2014).

Patent Granted

1. AGRICULTURE DRONE FOR SEED-SOWING AND FERTILIZER APPLICATION (Application No.: 429927-001), Name of Applicant: Dr. Vikas Singh Panwar, Mr. Alistair ArnoldJ ohnny, Mr. Kewal Vaity, Mr. Muzammil Shaikh, Mr. Vishant Wahane, Dr. Anish Pandey, Dr. Lalit Patil, **Dr. Vikash Agrawal**, Date of Filing: 10-September-2024, Date of grant: 20-November-2024.

Patent Published

1. SMART HOME AND KITCHEN AUTOMATION (Application No.: 202421043494), Name of Applicant: Dr. D. Y. Patil Institute of Technology, Pimpri, Pune, Inventors Name: **Dr. Vikash K. Agrawal**, Divyansh Agrawal, Omkar Shinde, Ganesh Gujar, Date of Filing: 06-May-2024, Date of Publication: 05-July-2024.

2. DESIGN AND DEVELOPMENT OF PROCESSING AUTOMATION (Application No.: 202421043847), Name of Applicant: Dr. D. Y. Patil Institute of Technology,Pimpri, Pune, Inventors Name: **Dr. Vikash K. Agrawal**, Mr. Madhavan R. Swami, Mr. Shinde H. Shivaji, Mr. Omkar D. Bhangade, Mr. Atharva S. Jagtap, Date of Filing: 06-June-2024, Date of Publication: 12-July-2024.

3. Hovercraft Controlled by Android (Application No.: 202521088798), Name of Applicant: Dr. D. Y. Patil Institute of Technology, Pimpri, Pune, Inventors Name: **Dr. Vikash K. Agrawal**, Sanika Patil, Sushmita Totre, Sanika Yadav, Aarti Mohite, Siddhi Gaikwad, Date of Filing: 18-Sept-2025, Date of Publication: 03-Oct-2025.

4. Smart Door Locking System with NFC Technology (Application No.: 202521088771), Name of Applicant: Dr. D. Y. Patil Institute of Technology, Pimpri, Pune, Inventors Name: **Dr. Vikash K. Agrawal**, Dr. Lalit N. Patil, Mr. Divyansh Agrawal, Mr. Tushar Thaware, Mr. Ganesh Gujar, Date of Filing: 18-Sept-2025, Date of Publication: 03-Oct-2025.

Publications

Journal Articles (Scopus/Web of Science Indexed):

1. **Vikash Kumar Agrawal**, H.P. Khairnar, "Experimental & Analytical Investigation for Optimization of Disc Brake Heat Dissipation Using CFD," EVERGREEN, 9(4), pp. 1076–1089, 2022. https://doi.org/10.2109/6625720
2. **V. Agrawal**, H. P. Khairnar, "Analytical Modeling of Heat Transfer Coefficient Analysis in Dimensionless Number of an Electric Parking Brake Using CFD," International Journal of Engineering (IJE) Transaction B: Applications, 36(2), pp. 276–288, 2023. https://doi.org/10.5829/ije.2023.36.02b.08
3. Dr. Mahesh M Sonekar, Dr. Kishor B Waghulde, Dr. Kishor K Dhande, Dr. Rachna K Somkunwar, Dr. Lalit N Patil, **Dr. Vikash K Agrawal**, "Control Systems Design for Autonomous Vehicles: Mathematical Approaches to Path Planning and Trajectory Tracking," Panamerican Mathematical Journal, 33(3), pp. 108–123, 2023. https://doi.org/10.52783/pmj.v33.i3.884
4. **Vikash K. Agrawal**, Lalit N. Patil, Kaustabh Vijay Chavan, U. D. Nimbalkar, "A Computational Analysis of Heat Transfer in Solid and Vented Disc Brakes: CFD Simulation

and Thermal Performance Assessment," Multiscale and Multidisciplinary Modeling, Experiments and Design, 2024. https://doi.org/10.1007/s41939-024-00400-y

5. Lalit N. Patil , Digvijay G. Bhosale, Yashraj M. Patil, Gorakh P. Bhagat, Atul A. Patil, Sarika S. Satpute ,**Vikash K. Agrawal**, "Investigation on Different Parameters Associated with Purchase of Electric Vehicle in India," Case Studies on Transport Policy, Elsevier, 12, pp. 101152, 2024. https://doi.org/10.1016/j.cstp.2024.101152
6. U.D. Nimbalkar, Apoorv Sureshkumar Mishra, Pankaj E. Rawool, **V.K. Agrawal**, "Numerical Study for Separation of Particle in Helical Microchannel," Progress in Computational Fluid Dynamics, 24(5), Inderscience Publishers, 2024. https://doi.org/10.1504/PCFD.2024.140907
7. **Vikash K. Agrawal**, Lalit N. Patil, Vikas S. Panwar, Lalit K. Toke, Srinivasa Rao Bogireddy, Kaustabh Vijay Chavan, U. D. Nimbalkar, Mahesh M. Sonekar, Narendra R. Bhople "Optimizing Ventilated Disk Brake Design for Enhanced Thermal Performance: An Analytical and Experimental Approach," Multiscale and Multidisciplinary Modeling, Experiments and Design, Springer, ESCI-Q2, 2025. https://doi.org/10.1007/s41939-025-00797-0
8. Lalit N. Patil, **Vikash K. Agrawal**, Kishor K. Dhande, Shrihari D. Khatavkar, Ganesh D. Mande, Vishvajit S. Patil, Shreyash S. Ratnaparkhi, "Evaluation of a Robotic Restaurant Management System with UI Design, Voice Assistant, and Machine Learning Integration," Sigma Journal of Engineering and Natural Science, 43(2), June, pp. 899–909, 2025. https://doi.org/10.14744/sigma.2025.00078
9. Subhash Gadhave, Saketkumar Kosode, Vijaykumar Javanjal, Lalit N. Patil , **Vikash K. Agrawal** , Swapnil Jadhav, Lalit K. Toke "Enhancing Agricultural Efficiency in India with IoT Based Smart Boats," Sigma Journal of Engineering and Natural Science, 43(2), pp. 570–581, 2025. https://doi.org/10.14744/sigma.2025.00045
10. Vijaykumar K. Javanjal, Lalit N. Patil, Kuldeep A. Mahajan, Atul A. Patil, **Vikash K. Agrawal**, "Innovative Heating Strategies for Extending Electric Vehicle Range in Cold Weather Conditions," Sigma Journal of Engineering and Natural Science, 43(2), 2025. https://doi.org/10.14744/sigma.2025.00081
11. Swapnil S. JADHAV, **Vikash K. Agrawal**, Yashraj M. Patil, Mohammad Khan, Rehan M. Pansare, Yaeesh I. Shaikh , Lalit N. Pati , , Abhijit N. Sangale, Vijaykumar JAVANJAL, "Bone Fracture Detection Using Image Processing Techniques," Sigma Journal of Engineering and Natural Science, 43(3), pp. 748–759, June, 2025. https://doi.org/10.14744/sigma.2025.00069

12. L. Patil, L.K. Toke, and **V.K. Agrawal**, "Experimental Investigation on Electric Vehicle Braking System Using Fuzzy Rule-Based Control Strategy," World Journal of Engineering, Emerald Publishing, 2025. https://doi.org/10.1108/WJE-01-2025-0019
13. **Vikash K. Agrawal,** Srinivasa Rao Bogireddy, Lalit N. Patil, Madhavan R. Swami, Shinde H. Shivaji, Swapnil S. Jadhav, Omkar D. Bhangade, Atharva S. Jagtap "Enhancing Operational Efficiency through Robotic Process Automation in E-commerce," Sigma Journal of Engineering and Natural Science, 43(3), 2025. DOI: 10.14744/sigma.2025.00000
14. **Vikash K. Agrawal**, Lalit N. Patil, Swapnil S. Jadhav, Uddhav D. Nimbalkar, Subhash L. Gadhave, Kaustubh V. Chavan, Vijaykumar Javanjal, "Statistical and Mathematical Modeling of Temperature Dynamics in Automotive Brake Components: A Systematic Review," Sigma Journal of Engineering and Natural Science, 43(3), 2025. DOI: 10.14744/sigma.2025.00000
15. Kishor K. Dhande, Prakash Santosh Patil, Lalit N. Patil, **Vikash K. Agrawal**, Atul A. Patil, "Experimental investigation of thermo-hydraulic performance of multi semicircular rib of dimple hybrid channel," Sigma Journal of Engineering and Natural Science, 43(5), 2025. DOI: 10.14744/sigma.2025.00000
16. Swapnil S. Jadhav, Pranali B. KASHID, Lalit N. Patil, Sayali S. Jadhav, Pooja Koli, **Vikash Agrawal**, Subhash Gadhave, Santosh D. Sancheti, Yashraj M. Patil, Atul A. Patil, "Enhancing Sound Quality Through Audio Beam Formation: A MVDR Algorithm Approach with Linear Microphone Arrays," Sigma Journal of Engineering and Natural Sciences, Vol. 43, No. 6, pp. XX-XX, December, 2025, Yildiz Technical University Press, Istanbul, Turkey Manuscript Accepted for Publication.
17. Lalit N. Patil, Dipak Patil, Nikhil Shinde, **Vikash K. Agrawal**, Vijaykumar Javanjal, Atul A. Patil, "Electric Vehicles and Sustainability: A Systematic Review on Analyzing Environmental Impact, Battery Technologies, and Policy Implications," Sigma Journal of Engineering and Natural Science, 2025, Manuscript Accepted for Publication.
18. Lalit N. Patil, Dipak Patil, Nikhil Shinde, **Vikash K. Agrawal**, Atul A. Patil, "Sustainable Fertilizers and Biofertilizers: Current Trends and Future Directions," Sigma Journal of Engineering and Natural Science, 2025, Manuscript Accepted for Publication.
19. Lalit N. Patil, Gulab Sirakar, Dipak Patil, Nikhil Shinde, **Vikash K. Agrawal**, "Enhancing Human Health through an Intelligent Brake System: Mitigating Noise and Air Pollution for Urban Environments," Sigma Journal of Engineering and Natural Science, 2025, Manuscript Accepted for Publication.

20. Lalit N. Patil, Dipak Patil, **Vikash K. Agrawal**, Ashima Kalra, Parth Sabale, Tanvi Suryawansh,Vaibhav Tubhe, Atharv Thorve, "A Critical Review on Disaster Management using Autonomous Skid Stir Loader," Sigma Journal of Engineering and Natural Science, 2025, Manuscript Accepted for Publication.
21. Lalit N. Patil, Dipak Patil, Nikhil Shinde, Ashima Kalra**,** Atul Patil, **Vikash K. Agrawal**, "Economic Analysis of Solar based electric technology by rural people: The case of Jalgaon district in India," Sigma Journal of Engineering and Natural Science, 2025, Manuscript Accepted for Publication.
22. Lalit N. Patil, Dipak Patil, Dnyaneshwar Mate, **Vikash K. Agrawal**, Niyaj Shikalgar, Rupesh Mahajan, Rana Mahajan, Bharat Waghode "Laboratory Assessment of Wear Particle Emissions and Noise Characteristics in Smart Braking System," Sigma Journal of Engineering and Natural Science, 2025, Manuscript Accepted for Publication.

Journal Articles (UGC Journal Indexed):

1. **Vikash K. Agrawal,** Lalit N. Patil, Niyaj D. Shikalgar, Yashraj M. Patil, Vijay Javanjal, Subhash Gadhave and Uddhav D. Nimbalkar, "Safety challenges in high-voltage electric vehicle collisions: risks and design strategies," Discover Electronics, Springer, 2 (53),2025. https://doi.org/10.1007/s44291-025-00099-2

Presented & Published Paper in National/International Conference (Scopus Indexed)

1. **Vikash K. Agrawal** , Lalit N. Patil, Yashraj M. Patil, Mahesh M. Sonekar, Atul A. Patil, and Pramod D. Patil "CFD Investigation for Exact and Estimates Heat Flux with Identification Error of Brake Pads", E3S Web of Conferences **559**, 02012, 2024, https://doi.org/10.1051/e3sconf/202455902012 .
2. **Vikash K. Agrawal**, Srinivasa Rao Bogireddy, Lalit N. Patil, Mahesh Sonekar, Yashraj M. Patil, Vikas Singh Panwar, "Optimizing Handwritten Character Recognition Systems: Neural Networks vs. Statistical Methods", International Conference on Intelligent Systems and Advanced Applications (ICISAA), Pune, IEEE, Pg. No. 1-9, 2024. DOI: 10.1109/ICISAA62385.2024.10828993
3. **Vikash K. Agrawal**, Srinivasa Rao Bogireddy, Lalit N. Patil, Mahesh Sonekar, and Yashraj M. Patil, Vikas S. Panwar, "Handling Missing Data in the Iris Dataset: Imputation

Techniques and Their Effects on Model Accuracy", Global Conference in Emerging Technology (GINOTECH), Pune, IEEE, 2025. DOI: 10.1109/GINOTECH63460.2025.11076709

4. Vikas Singh Panwar, Shyam Mogal, Anish Pandey, Lalit Patil, Digvijay Bhosale, and **Vikash Agrawal,** "A Vibration-Based Signal Processing Approach for The Multi-Fault Diagnostics of Gear Systems", Global Conference in Emerging Technology (GINOTECH), Pune, IEEE, 2025. DOI: 10.1109/GINOTECH63460.2025.11076650

Book Chapters

1. **Vikash K. Agrawal**, Srinivas Rao Bogireddy, Shreyash Bute, Mohit Patle, Aditya Magar, Dhruv Kotnis, "Integrating Robotics and AI in Agriculture: Smart AgriBot for Optimized Fertilization and Harvest Monitoring". Next Generation Robotics: AI Powered Systems for Automation and Control, ICSI2025.
2. Lalit N. Patil, **Vikash K. Agrawal**, Lalit K. Toke, Atul A. Patil, Vijay K. Javanjal, and Bhawna Tandon, "Transforming Industry 4.0: The Synergy of IIoT and Machine Learning for Enhanced Production Efficiency". **DOI: 10.1201/9781003538271-8.**
3. Lalit N. Patil, **Vikash K. Agrawal**, Lalit K. Toke, Atul A. Patil, Vikas S. Panwar, and Ashima Kalra, "Autonomous Robotics and Intelligent Automation in Industry 5.0". **DOI: 10.1201/9781003538271-13.**
4. Lalit N. Patil, **Vikash K. Agrawal**, Lalit K. Toke, Atul A. Patil, Srinivasa Rao Bogireddy, and Bhawna Tandon, "Integrating IoT and Machine Learning for Enhanced Smart City Development and Urban Infrastructure". **DOI: 10.1201/9781003538271-15**
5. Lalit N. Patil, **Vikash K. Agrawal**, Lalit K. Toke, Swapnil S. Jadhav, Vikas S. Panwar, and Vikram Puri, "Enhancing Quality Control in Industry 4.0 by Leveraging Deep Learning and Machine Vision for Defect Detection and Process Optimization". **DOI: 10.1201/9781003538271-21.**

Additional Responsibilities

1. **Organized** an ISTE approved One Week National Level Faculty Development Program on, Pune from 16th June to 20th June 2025 on "**Emerging Trends in 3D Printing and its Biomedical Applications**" at Dr. D. Y. Patil Institute of Technology, Pimpri, Pune.
2. **Organized** an ISTE approved One Week National Level Faculty Development Program on "**Exploring Perspectives of AI and ML in Robotics and Automation**" from 24th to 28th June 2024, at Dr. D. Y. Patil Institute of Technology, Pimpri, Pune.
3. **Organized** an ISTE approved One Week National Level Faculty Development Program on "**Innovations in Simulation Techniques for Robotics and Mechanical Systems**" from 22nd to 27th January 2024, at Dr. D. Y. Patil Institute of Technology, Pimpri, Pune.
4. Working as **Department Alumni coordinator** at Dr. D. Y. Patil Institute of Technology, Pimpri, Pune for A.Y. 2023-24.
5. Working as **Department Academic Coordinator** at Dr. D. Y. Patil Institute of Technology, Pimpri, Pune.
6. Working as **Department Advisory Board Coordinator** at Dr. D. Y. Patil Institute of Technology, Pimpri, Pune.
7. Working as **Time- Table Coordinator** at Dr. D. Y. Patil Institute of Technology, Pimpri, Pune.
8. Appointed as **Subject Chairman** (Appointment No.- 2510330669) by the Savitribai Phule Pune University (**SPPU**) for a final year subject of Automation & Robotics branch- "**Artificial Neural Network and Deep Learning (402543)**" in A.Y. 2023-24, 2024-25, 2025-26.
9. Appointed as **Subject Chairman** (Appointment No.-25134090) by the Savitribai Phule Pune University (**SPPU**) for a third-year subject of Automation and Robotics branch- "**Data Science (402552A)**" in second semester of A.Y. 2022-23, 2024-25.
10. Appointed as **Subject Chairman** (Appointment No.- 25204296) by the Savitribai Phule Pune University (**SPPU**) for a final year subject of Automation & Robotics branch- "**Computational Fluid Dynamics (402544E)**" in A.Y. 2023-24. 2024-25, 2025-26.
11. **Head of Department** for Department of Mechanical Engineering at Shree L. R. Tiwari College of Engineering, Mira road (E), Mumbai**.** (July 2017-Jan 2020).

Courses Taught (B.E/B.Tech)

1. Artificial Neural Network and Deep Learning
2. Data Science
3. Optimization Techniques
4. Theory of Machines
5. Engineering Mechanics
6. Strength of Material
7. Automobile Engineering
8. Operation Research

Courses Taught (M.Tech/Ph.D.)

1. Chassis Body Engineering
2. Vehicle Dynamics
3. Computational Methods

Academic Activities

Reviewer

- International Journal of Intelligent Robotics and Applications, Springer.
- Discover Electronics, Springer.
- Multi Tool and Application, Springer.
- Journal of Vibration Engineering & Technologies, Springer.
- Sigma Journal of Engineering and Natural Sciences.
- Journal of Thermal Engineering.
- International Journal on Interactive Design and Manufacturing
- World Journal of Engineering, Emerald Publisher, SCI
- 2nd International Conference on Power Engineering and Intelligent Systems (PEIS2024) held at National Institute of Technology (NIT) Uttarakhand during March 16-17, 2024 and technically sponsored by Soft Computing Research Society.
- 4th International Conference on Intelligent Vision and Computing (ICIVC- 2024) organized by National Institute of Technology (NIT) Agartala during November 23-24, 2024 and technically sponsored by Soft Computing Research Society& Springer.

Computer skills

1. Course of ANSYS software completed from CADD Centre.
2. Completed course of Python, Data Science from Velocity Corporate Training Center, Pune.
3. Knowledge of AI tools for research and writing.

Languages Known

Mother Tongue - Hindi

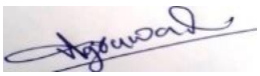
Other Languages Known - English, Marathi

Referees

1. **Dr. H.P. Khairnar** (Assistant Professor), Department of Mechanical Engineering, Veermata Jijabai Technological Institute, Matunga, Mumbai.
   E-mail Id- hpkhairnar@me.vjti.ac.in
   Contact No. – +91 9221400737
2. **Dr. Lalit N. Patil** (Associate Professor), School of Mechanical & Manufacturing Sciences, JSPM University, Wagholi, Pune, India
   E-mail Id- lnp.smms@jspmuni.ac.in
   Contact No. – +919960081688

Declaration

I hereby declare that above mentioned information is true to the best of my knowledge and the originals of all documents will be presented when and where required.



Dr. Vikash K. Agrawal