Ketaki Narendra Joshi

Assistant Professor – Production Engineering

Qualification

- Ph.D. (Mechanical Engineering - Pursuing), University of Mumbai, (Thesis Submitted)
- M.E. (Mechanical), specialization in Manufacturing Systems Engineering, Lokmanya Tilak College of Engineering, University of Mumbai (2014)
- B.E. (Mechanical), Sardar Patel College of Engineering, University of Mumbai (2006)

Academic Experience (6 Years 3 Months)

1. Fr. Conceicao Rodrigues College of Engineering, Mumbai University, Assistant Professor, Production Engg. Dept, May 2016 - Present, Full time
2. Fr. Conceicao Rodrigues College of Engineering, Mumbai University, Assistant Professor (Adhoc), Production Engg. Dept, Jan 2015 – Apr 2016, Full time
3. Lokmanya Tilak College of Engineering, Navi Mumbai, Mumbai University, Assistant Professor (Adhoc), Mechanical Engg. Dept, Jul 2013 - Dec 2014

Industrial Experience (5 Years 1 Month)

I.T. Analyst, Tata Consultancy Services, Jun 2006 - Jul 2011

Membership in Professional Bodies

1. Lifetime Membership, Indian Society for Technical Education, Registration No: LM 123412
2. Lifetime Membership, Indian Institute of Industrial Engineering , Registration No: LM 10307 (21)

Design Patent

Article for Image Acquisition and Measurement of Surface and Dimensional Quality (Design Patent accepted and Published, Journal No: 29/2019 and Journal Date: 19/07/2019 Application Number: 296740 dated 18th August 2017)

Book Chapter (Invited by Editor-in-Chief)

Joshi K. N., Patil B. T., Vaishnav H. B. (2020) Principal Components based Multivariate Statistical Process Monitoring of Machining Process using Machine Vision Approach, In: Patnaik S. (eds) New Paradigm of Industry 4.0. Studies in Big Data, vol 64. **Springer**, Cham

Honors and Awards

1. **Best Paper Award** - Joshi K. N., Patil B. T., (2018) Recent Developments in Quality Inspection of Spur Gears using Machine Vision Technology, International Conference on Role of Industrial Engineering in Industry 4.0 Paradigm, organized by IIIE, Bhubaneswar in association with SOA, (ICIEIND– 2018)
2. **Best Paper Award** - Joshi K.N., Patil B. T., (2018) Machine Vision based Multivariate Statistical Process Monitoring: An Efficient Tool for Quality Control and Management, 3rd National Conference on Industrial Engineering and Technology Management, NCIETM 2018, NITIE
3. **TCS GEMS**, Service and Commitment Award, 2009-10

Research Publications

Journal Publications

1. Joshi, K.N. and Patil, B.T., (2018) Effect of Illumination Systems on Statistical Texture Parameters Based Clustering and Discrimination of Machined Surfaces Using Machine Vision. MAPAN, pp.1-9. (Springer Publications) https://doi.org/10.1007/s12647-018-0279-z" (Scopus Indexed)
2. Joshi K.N., Patil B. T., (2019) Performance Evaluation of Various Texture Analysis Techniques for Machine Vision based Characterization of Machined Surfaces, International Journal of Computational Vision and Robotics (IJCVR) (Inderscience Publications)(Accepted) (Scopus Indexed)
3. Joshi, Ketaki & Patil, Bhushan. (2018). A Review of Machine Vision based Evaluation of Surface Roughness using Texture Analysis Techniques. Industrial Engineering Journal. 11. 10.26488/IEJ.11.11.1150. (UGC Approved Journal as per UGC-Care List)
4. Joshi K. N., Patil B. T., Vaishnav H. B., (2019) Multivariate Statistical Process Monitoring: A Perspective of Machine Vision, Udyog Pragati, NITIE (Accepted)
5. Joshi K. N., Patil B. T., Inspection of Spur Gears using Machine Vision: Accuracy and Precision Analysis, Pattern recognition and Image Analysis (Springer Publications) (under Review) (Scopus Indexed)
6. Joshi K.N., Patil B. T., Machine Vision based Multivariate Statistical Process Monitoring and Control of Machining Process using Principal Components based Hotelling T^2 Charts, Journal of Metrology Society India (MAPAN) (Springer Publication) (under Review) (Scopus Indexed)
7. Joshi K. N., Patil B. T., (2016) Review of Industrial Metrology using Machine Vision, International Journal of Emerging Technology and Advanced Engineering, (ISSN 2250-2459, ISO 9001:2008 certified Journal, Volume 6, Issue 6, June 2016), pp 125-131
8. Ketaki N. Joshi, Dr. Bhushan T. Patil, Mr. Sunil Satao, Dr. Chandrababu D **(2014)** "Optimization of Variation in Wall Thickness of a Deep Drawn Cup Using Virtual

Design of Experiments", IRACST-Engineering Science and Technology: An International Journal (ESTIJ), ISSN: 2250-3498, Vol. 4, No. 5, 124-128

9. Ketaki N. Joshi, Dr. Bhushan T. Patil, Mr. Sunil Satao, Dr. Chandrababu D **(2014)** "Review of Optimization Aspects for Metal Forming Process", IRACST-Engineering Science and Technology: An International Journal (ESTIJ), ISSN: 2250-3498, Vol. 4, No. 2, 71-75

International Conferences

10. Joshi, K.N. and Patil, B.T., (2019). A Perspective of Integrated Machine Vision Based-Multivariate Statistical Process Control. In Proceedings of International Conference on Intelligent Manufacturing and Automation (pp. 463-471). Springer, Singapore. (Scopus Indexed)
11. Joshi K. N. and Patil B. T., (2019). Prediction of Surface Roughness by Machine Vision using Principal Components based Regression Analysis. In International Conference on Computational Intelligence and Data Science (ICCIDS 2019). Elsevier (Scopus indexed)
12. Joshi K.N., Patil B. T., (2019) Evaluation of Surface Roughness by Machine Vision using Neural Networks Approach, In International Conference on Recent Advances in Mechanical Infrastructure (ICRAM 2019), (Publication as a book chapter in Springer Book Series)
13. Joshi K. N., Patil B. T., (2018) Recent Developments in Quality Inspection of Spur Gears using Machine Vision Technology, In International Conference on Role of Industrial Engineering in Industry 4.0 Paradigm, organized by IIIE, Bhubaneswar in association with SOA, (ICIEIND– 2018)
14. Joshi K. N., Patil B. T., (2017) A Review of Machine Vision based Evaluation of Surface Roughness using Texture Analysis Techniques, In International Conference on Manufacturing and Industrial Engineering – 2017, Organized by Indian Institution of Industrial Engineering, (ICMIE-2017) (further published in IE journal)
15. Shinde R.A., Patil B. T., Joshi K. N., (2016) Optimization of Tube Hydroforming Process (without Axial Feed) by Using FEA Simulations, Procedia Technology, Volume 23, 2016 – 398-405 (Springer)

National Conference

16. Joshi K.N., Patil B. T., (2018) Machine Vision based Multivariate Statistical Process Monitoring: An Efficient Tool for Quality Control and Management, 3rd National Conference on Industrial Engineering and Technology Management, NCIETM 2018, NITIE
17. Joshi K.N., Patil B. T., "Review of Optimization Aspects for Metal Forming Process", AICTE Sponsored National Conference on "Challenges and Opportunities for Production and Industrial Engineering organized by VJTI, Matunga, Mumbai, Jan 2013

Reviewer - International Journals

- International Journal of Advanced Manufacturing Technology (IJAMT), Springer Publications
- Industrial Engineering journal by IIIE

Participation in Faculty development / Training Activities

- 1 Week STTP on "Research Methodology in Engineering & Technology" organised by Shri Bhagubhai Mafatlal Polytechnic, Vile Parle, Mumbai, 14th -18th May 2018
- 1 Week STTP Emerging Application of SOLIDWORKS in Engineering R & D" organised by Bharati Vidyapeeth College of Engineering, Navi Mumbai, 17th - 21st April 2018
- 12 Weeks Course by NPTEL - Introduction to Machine Learning – Online, April 2018
- 12 Weeks Course by NPTEL – Product Design and Manufacturing – Online, April 2019
- 2-Days Faculty Development Program on "Computational Fluid Dynamics using Simulations" organised by Department on Production Engineering, Fr. CRCE, 3rd and 4th Feb 2017
- 2-Days Faculty Development Program on "Hands-on Training on Mechatronic Systems" organised by Department on Production Engineering, Fr. CRCE in association with Christiani Sharpline, 19th and 20th August 2016
- 2-Days Faculty Development Program on "Intellectual Property Rights" organised by Department on Production Engineering, Fr. CRCE, 5th and 6th Feb 2016
- 2-Days Faculty Development Program on "Simulation of Manufacturing Systems" organised by Department on Production Engineering, Fr. CRCE, 13th and 14th March 2015

Resource person in Workshops / Training Programs

- 1 Week training program on "Motion Analysis using Solidworks", Jan 2019
- 2-Days Faculty Development Program on "Multivariate Statistical Techniques used in Research" organised by Department on Production Engineering, Fr. CRCE, 9th and 10th March 2018

FDPs/ STTPs/ Workshops Conducted

- 1 Week training program on "Motion Analysis using Solidworks", Jan 2019
- 2-Days Faculty Development Program on "Multivariate Statistical Techniques used in Research" organised by Department on Production Engineering, Fr. CRCE, 9th and 10th March 2018
- 2-Days Faculty Development Program on "Computational Fluid Dynamics using Simulations" organised by Department on Production Engineering, Fr. CRCE, 3rd and 4th Feb 2017
- 2-Days Faculty Development Program on "Hands-on Training on Mechatronic Systems" organised by Department on Production Engineering, Fr. CRCE in association with Christiani Sharpline, 19th and 20th August 2016

Subjects Taught

Machine Design – I
Product Design and Development
Dynamics of Machines

Areas of interest

Machine Vision
Product Design
Manufacturing Simulations
Statistical Techniques