

SANJEEV GOYAL, Ph.D, Post Doc

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EXECUTIVE SUMMARY

- ✦ Principal, Community College (under UGC) since 2018; strengthened it from 20 to 500 students with fund enhancement to 30 million from 2 million INR.
- ✦ Director, Alumni & Corporate Affairs since 2018; developed portal, held meets and expert lectures for improving interaction with Alumni comprising since 1974.
- ✦ Post Doc in Data Sciences under the guidance of Prof. Bopaya Bidanda, Industrial Engineering Dept., Swanson School of Engineering, University of Pittsburgh, USA from Oct. 2016 to Oct. 2017
- ✦ Projects on 'Predicting Mass care requirements for riverine flood responses on day '0' for American Red Cross and 'Supply Chain Disruption Management' by using SKLearn, Python 2.7, MCMC, Statistics, Bayesian Statistics with MCMC (PyMC3)
- ✦ Developed an app "Strategic planning tool for visual decision making" under the guidance of Prof. John C. Camillus at Katz Business School, University of Pittsburgh by using Matlab
- ✦ Successfully guided two Ph.D students and guiding another two on Application of data science in Industry 4.0
- ✦ Courses attended- IE 2064 Data Science at University of Pittsburgh & Introduction to Machine Learning(Ph.D)-10701 at CMU, Pittsburgh
- ✦ Published '15' research papers in International Journals including Journals of SCI, IEEE Explorer, Springer, Emerald Publishers, Inderscience Publishers and '18' in International and National Conferences.
- ✦ Excellent communication with exceptional interpersonal, problem solving and leadership skills.

CAREER CONTOUR

J. C. Bose University of Science & Technology, YMCA, Faridabad	Associate Professor	Since Jan'2020
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ACADEMIC CREDENTIALS

Post Doc (Decision Sciences); (Oct., 2016 to Oct., 2017)

Industrial Engineering Dept., Swanson School of Engineering, University of Pittsburgh, USA

Projects:

- Predicting Mass care requirements for river flood responses on day '0' (A joint project with American RedCross)
Skills: Machine Learning (SKLearn, Python 2.7, Statistics)
- Supply Chain Disruption Management
Skills : Bayesian Statistics with MCMC (PyMC3)
- Strategic planning tool for visual decision making
Skills: Analytic Hierarchy Process, Matlab

Ph.D. (Mechanical Engineering); 2012

Maharishi Dayanand University, Rohtak

Topic of Ph.D thesis “A Novel Model for Evaluating Effectiveness of Manufacturing System by Deployment of MADM Techniques”

M.Tech. (Manufacturing & Automation); 2006

Sant Longowal Institute of Engineering and Technology, Longowal, Punjab with 72.3%

Topic of M.Tech thesis is “Availability Prediction and Analysis of a Complex Milk Plant by using Markov Process”

B.Tech. (Mechanical Engineering); 2001

Shaheed Bhagat Singh State Technical Campus, Ferozepur with 70%

Topic of B.Tech project is “Design and Development of a Hydraulic Screw jack for Ease of Operation”

12th (Non-Medical); 1997

S. D. College, Barnala with 77.3%

10th; 1995

GAHS, Barnala with 87%

Bagged National Scholarship for meritorious students and participated in various Science Quiz Competitions.

ONLINE CERTIFICATE COURSES

↳ “Machine Learning”, Stanford University, 2016-2017

↳ “Bayesian Statistics”, University of California, 2016-17

Date of Birth: 13th September 1979

References:

(1) Prof. John C. Camillus, Donald R Beall Professor of Strategic Management, Katz Business School, University of Pittsburgh, camillus@katz.pitt.edu, camillus@pitt.edu

(2) Prof. Bidanda Bopaya, Ernest E. Roth Professor of Industrial, Industrial Engineering Department, University of Pittsburgh, bidanda@pitt.edu

(3) Dr. Virender Vats, Advisor, Centurian University, janadharsociety@gmail.com

Additional Details mentioned in the Annexure

SHORT TERM COURSES ATTENDED

- ✂ CAD using CATIA from 02/07/07 to 14/07/07 at CIPET, Chennai.
- ✂ Basic Robot Programming from 17/09/2008 to 21/09/2008 at KUKA College, Pune.
- ✂ Emerging Trends in Manufacturing Systems from 16/06/2010 to 18/06/2010 ESCI, Hyderabad.
- ✂ Engineering Applications of Graph Theory on March 27, 2010 at Thapar University, Patiala.
- ✂ Building Integrated Photovoltaic Thermal Systems from Feb 8-14, 2011 at IIT, Delhi.
- ✂ Photovoltaic Thermal (PVT) Applications from Feb 8-14, 2011 at IIT, Delhi.
- ✂ Decision Making Techniques for Engineering and Management from March 7-11, 2011 at IIT, Roorkee.
- ✂ Advances in Manufacturing Systems from June 20-24, 2011 at NIT, Surat.
- ✂ Innovations in Maintenance Management from 21st May to 25th May, 2012.
- ✂ Experimental Design Techniques for Analysis of Multiple Responses from May 28th to June 8th 2012 at Thapar University, Patiala.
- ✂ Applications of Renewable Energy Sources from Dec., 11-17, 2013 at IIT, Delhi.
- ✂ Modeling and Simulation of Dynamical Systems and Optimization (MSDSO-2014) from June 9-13, 2014 at DTU, Delhi.
- ✂ Recent Advances in Utilization of Hydrogen in Internal Combustion Engines from July 7-11, 2014 at IIT, Delhi.
- ✂ Advances in Solar Energy Technologies from Dec. 9-15, 2014 at IIT Delhi
- ✂ Technical Teachers' Role, Self Esteem, Motivation and Professional Development through ICT from 8th to 12th June, 2015 BY NITTTR Chandigarh
- ✂ Communication Skills through ICT from 11th to 15th Jan., 2016 by NITTTR Chandigarh
- ✂ Robotics & CNC Programming & its applications on 26th April, 2019, YMCA, Faridabad.
- ✂ Data science and Big data Analytics from 28th Aug to 01st Sept, 2018.
- ✂ National level faculty development program on Entrepreneurship from 16th to 30th July, 2019.
- ✂ Standardization and calibration from 25th to 26th feb, 2020.

PUBLICATIONS (*Total Citations: 265; H-index 9, i10-index 8*)

International Journals:

- 1) Microstructure and mechanical behavior of AA6082-T6/SiC/B4C-based aluminum hybrid composites, Particulate Science and Technology, Taylor & Francis, SCI Impact Factor: 0.79, In Press
- 2) "Dry Sliding Wear Behaviour of AA6082-T6/SiC/B4C Hybrid Metal Matrix Composites using Response Surface Methodology", Journal of Materials: Design and Applications, SCI Impact Factor: 0642, In Press
- 3) "Systematic Literature Review of Classification and Categorization of Benchmarking in Supply Chain Management", International Journal of Process Management and Benchmarking, 2017, Vol.7, No.2
- 4) "Identification of Factors affecting the Selection of Stainless Steel Cladding Process", Journal of Material Science and Mechanical Engineering (JMSME), Vol. 2, No. 10, April-June, 2015, pp. 65-69
- 5) "Parameter Optimization of Wire EDM using Low Frequency Vibrations", Invertis Journal of Science & Technology, 2015, Vol. 8, No. 3, 119-124
- 6) "Critical Analysis of Performance Factor of Wire EDM Machine", Invertis Journal of Science & Technology, 2015, Vol. 8, No. 3, 132-138
- 7) "Integrity of Supplier and Distributor with Manufacturing Company in Supply Chain Management", Invertis Journal of Science & Technology, 2015, Vol. 8, No. 2, 95-100
- 8) "Applying Fuzzy Grey Relational Analysis for Ranking the Advanced Manufacturing Systems", Grey Systems: Theory and Application, Emerald Publishers, 2013, 2(1), 284 – 298.

- 9) "A Fuzzy Multi Attribute Decision Making Approach for Evaluating Effectiveness of Advanced Manufacturing Technology-In Indian Context", International Journal of Productivity & Quality Management(IJPQM), Inderscience Publishers, 2013, 11(2), 150-178.
- 10) "A Novel Method for Evaluating Effectiveness of a Manufacturing System by using Combined Approach of ANP and GTMA", International Journal of System Assurance Engineering & Management, Springer, 2013, 4 (4), 404-423.
- 11) "Advanced Manufacturing Technology Effectiveness- a Literature Review and Some Issues", Frontiers of Mechanical Engineering, Springer, 2013, 7(3), 256-267.
- 12) "A Comprehensive Bibliography on Effectiveness Measurement of Manufacturing Systems", International Journal of Industrial Engineering Computations, Growing Science Press, 2012, 3(1), 587-606.
- 13) "Fuzzy & Graph Theoretic Approach for the Selection of Advanced Manufacturing System Investments", Singaporean Journal of Scientific Research (SJSR), Vol. 2, No.2, pp. 70-74, ISSN: 2231-0061
- 14) "Evaluating Implementation Model of AMT- A Graph Theoretic Approach", Journal of Marketing and Operations Management Research, Nova Science Publishers, 2011, 1(2), 115-142, ISSN: 1949-4912.
- 15) "Selection of Grippers- A Fuzzy Graph Theoretic Approach" Applied Mechanics and Materials, Trans Tech Publications, Switzerland, 110-116 (2012), 5308-5313, doi:10.4028

National Journal:

- 16) "Manufacturing System Effectiveness Measurement- a Literature Review", Journal of Scientific and Industrial Research, NISCAIR, in press.

Under Review:

- 17) "A TISM Approach for Modelling the Critical Factors of Advanced Manufacturing Technology: in Indian Context", International Journal of Advanced Manufacturing Technology, Springer, at second stage, Impact Factor 1.205

CONFERENCES ATTENDED

International Conference:

- 1) "Early Forecasting of Flood Response Requirements for American Red Cross Mass Care Services", INFORMS, Houston, Texas, Oct. 20-25, 2017
- 2) "Identification of factors affecting the selection of stainless steel cladding process", Proceedings of the International Conference on Material Science and Mechanical Engineering, JNU Delhi, May 30-31,2015, pp. 65-69.
- 3) "A Review Paper on Resistance Spot Welding Electrode Life", Proceedings of the International Conference on "Contemporary Challenges in Management, Technology & Social Sciences", MGIMT, Lucknow, April 5-6, 2014.
- 4) "Applying Fuzzy MADM Approach for selection of Technical Institutions", IEEE Explorer, Hong-Kong, 1405-1408, Dec 10-13, 2012
- 5) "Selection of Grippers-A Fuzzy Graph Theoretic Approach", International Conference on Mechanical and Aerospace Engineering (CMAE 2011), IEEE, 2011, pp. 320-323
- 6) "A Fuzzy TOPSIS Approach for the Evaluation of Effectiveness of Advanced Manufacturing Systems Over the Traditional Manufacturing Systems", Proceedings of the International Conference on Advances in Modelling, Optimization and Computing, IIT Roorkee, Dec 5-7, 2011, pp: 234-241.
- 7) "Optimizing Wire Electric Discharge Machining Parameters Through Taguchi", Proceedings of the International Conference on Innovative Technology-Research and Development in Science,

Technology and Management (ICIT-09), PDM College of Engineering & Technology, Bhadurgarh, Jun. 18-19, 2009.

- 8) Determination of Optimal Parameter Settings for Multi-Performance Characteristics in Drilling of Aluminium Matrix Composites (AMCs) by using Grey Relational Analysis”, Proceedings of the International Conference 22nd AIMTDR, IIT Chennai, Dec. 15-17, 2008, pp. 885-891.
- 9) “An Investigation on the Current Challenges for Advanced Materials in Wire Electric Discharge Machining (Wire-EDM)”, Proceedings of the International Conference on Advances in Mechanical Engineering, NIT Surat, Dec. 15-17, 2008, pp. 690-694.
- 10) “An Experimental Study on Design and Analysis of Sheet Metal Forming Die using Finite Element Approach”, Proceedings of the International Conference on Advances in Mechanical Engineering, NIT Surat, Dec. 15-17, 2008, pp. 685-689.

National Conferences:

- 1) “Gas Metal Arc Weld Cladding Process: A Review”, National Conference on Interdisciplinary Research in Science and Technology, LGVKS, Faridabad, April 17, 2015, pp. 132-134
- 2) “A review Paper: Supply Chain Management & Its Dimensions” Proceedings of the National Conference on Recent Trends in Mechanical Engineering (NCRTME-2015), Rawal Institute of Engineering & Technology, Faridabad, January 24, 2015, pp.18-23.
- 3) “Intensity of Critical Factors for Implementing AMT-an ANP Approach”, Proceedings of the National Conference on “Trends & Advances in Mechanical Engineering”, Oct., 19-20, 2012 at YMCAUST, Fbd, pp:902-905.
- 4) “A Review of Literature on Worker Allocation Problem in FMS”, Proceedings of the National Conference on “Trends & Advances in Mechanical Engineering”, Oct., 19-20, 2012 at YMCAUST, Fbd, pp: 723-736.
- 5) “Human Factors effecting the success of Advanced Manufacturing Technology”, Proceedings of the National Conference on EFME, IIT Ghaziabad, Mar. 12-13, 2011.
- 6) “Critical success factors for implementing Advanced Manufacturing Technology”, AMPD 2010, Nov. 22-23, 2010 at NIT Surat, pp: 175-180.
- 7) “Multi Attribute Decision Making Techniques and its Application”, Proceedings of the National Conference on Recent Developments in Mechanical Engineering (NCRDME-2010), Laxmi Devi Institute of Engineering & Technology, Alwar, Oct. 29-30, 2010, pp. 128-132
- 8) “Development of Breakaway Steering Linkage to Reduce Steering Column Intrusions During Frontal Clashes”, Proceedings of the National Conference on Recent Advances in Mechanical & Production Engineering (RAMP 2009), GBPUAT, Pantnagar, Feb. 12-14, 2009, pp. 40-46.
- 9) “Current Research Trends in Machining of Hard Materials by Using EDM”, Proceedings of the National Conference on Recent Advances in Mechanical & Production Engineering (RAMP 2009), GBPUAT, Pantnagar, Feb. 12-14, 2009, pp. 40-46.

Book Publication

- ✎ “Evaluating Implementation Model of AMT – A Graph Theoretic Approach”, **HRM and Marketing orientation in new Era**, 2013, Nova publishers, New York
- ✎ “Tool Room Supervisor”, 2019, ISBN No. 978-93-5382-724-3

Editor

- ✉ National Conference on Role of Science and Technology Towards Make in India (RSTTMI-16), March 05-07, 2016
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REVIEW BOARD

- ✉ European Journal of Management Sciences
 - ✉ European Journal of Science and Engineering
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REVIEWER

- ✉ Applied Mathematical Modelling, *Elsevier*
 - ✉ Robotics and Computer Integrated Manufacturing, *Elsevier*
 - ✉ International Journal of Systems Assurance Engineering and Management (IJSA), *Springer*.
 - ✉ Arabian Journal for Science and Engineering, *Springer*
 - ✉ Scientific Research and Essays
 - ✉ Caspian Journal of Applied Sciences Research, Indexing in Thomson ISI
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AICTE SPONSORSHIP

- ✉ “Ranking of Advanced Manufacturing Systems based on Performance Measurement by using Fuzzy MADM Approach” In International Conference on Industrial Engineering and Engineering Management” at Hong Kong Convention and Exhibition Centre, Hong Kong, Dec. 10-13, got sponsorship of Rs 1,14,000 from AICTE.
 - ✉ Got grant of Rs. 3,00,000 for conduct of Short term training program on “Advances in Manufacturing Technology: CNC & Robotics”.
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INDUSTRIAL CONSULTACY

Provided ‘opening and closing energy calculation for car door hinge’ to **Venus Industries, Faridabad, India**

RESEARCH GUIDANCE

Ph.D Guidance

Successfully Guided:

- “Fabrication and experimental analysis of aluminum composites and optimization of process parameters”, Gurpreet Singh Saini
- “Benchmarking of internal supply chain management in select Indian manufacturing industries”, Kailash Attri

Guiding:

- “Data Driven Decision Making in Advance Manufacturing System”, Vimlesh Ojha
- “A Novel Model for Advanced Manufacturing system management by using Artificial Intelligence”, Sachidanand

M.Tech Guidance:

Research guidance imparted to 10 M.Tech students:

- ✉ Optimizing MRR in wire cut EDM using DOE approach by Vinod Kumar (MTM-2516-2k8).
- ✉ Modelling of Critical Success Factors for Implementing Advanced Foundry Technology in Indian Industry by Arun Raj (MME-251-2k9).
- ✉ Selections of Grippers: A Graph Theory Approach by Ram Parvesh (MME-265-2k9).

- ✉ Implementation of Analytic Network Process Approach (ANP) for Green Manufacturing by Mohit Bansal (MM-49-2k10).
- ✉ Analytic Network Approach for Total Productive Maintenance: A Case Study by Bijender Kumar (MME-253-2k9).
- ✉ Application of Integrated Decision Tool for Environmentally Conscious Manufacturing by Lalit Kumar (MM-58-2k10).
- ✉ Optimization of Critical Influence Factors of Resistance Spot Welding Electrode Life using ANP with Super Decision Software by Sunil (MM-76-2k12)
- ✉ Parameter optimization of Wire EDM using Low Frequency Vibration by Sagar Chugh (MM-274-2k13)
- ✉ Selection of Best Stainless Steel Cladding process using AHP by Vikram Singh Chandel (MM-278-2k13)
- ✉ Parametric optimization of Shielded Metal Arc Welding of Mild Steel (MS) 2062 using Taguchi Method by Brijesh Sharma (MM-464-2k14)

RESEARCH PROJECT

- ✉ Ongoing research project on the topic “Development of Hybrid Electrical Discharge Machine”.
- ✉ Submitted research project on ‘Intelligent Autonomous Systems’ to UGC worth of Rs. 7.5 million USD
- ✉ Mass Care Prediction in disaster (A joint project with American RedCross)
Skills: Machine Learning (SKLearn, Python 2.7, Statistics)
- ✉ Supply Chain Disruption Management
Skills : Bayesian Statistics with MCMC (PyMC3)

INVITED LECTURES

- ✉ On the topic “**Integration of Graph Theory with other Research Techniques**” in two-day National Seminar on “Application of Graph Theory- A Novel Technique for Research” at YMCA UST, Faridabad, sponsored by AICTE from Jan., 14-15, 2014.
- ✉ On the topic “**ANP- A Novel Technique**” in two-day Workshop on “Research Techniques and MADM Approaches” from April 16-17, 2013 at **YMCAUST, Faridabad**
- ✉ On the topic “**Advances in Automotive Transmission Technology**” in one day FDP at **Amity University** on 14th April, 2015.