# Dr. Uday Pratap Singh

B.Sc., M.Sc. (Mathematics & Statistics) (Gold Medalist)
M.Sc. (Mathematics & Computing)-IITG, NET(CSIR),
Ph.D. (Computer Science)

**Associate Professor**
**School of Mathematics**
**Shri Mata Vaishno Devi University, Katra (J&K)**

## BRIEF BIOGRAPHICAL SKETCH

**Dr. Uday Pratap Singh,** graduated in Mathematics from Dr. Ram Manohar Lohiya (Awadh) University, Ayodhya (U.P.) in 1998. He obtained his first M.Sc. degree in Mathematics & Statistics **(Gold Medalist)** in 2000, from Dr. Ram Manohar Lohiya (Awadh) University, Ayodhya, U.P. and Second M.Sc. degree in Mathematics & Computing from **Indian Institute of Technology, Guwahati**. He also qualified **CSIR (NET)** in 2007 and later he received his Ph.D. Degree in Computer Science from Barkatullah University, Bhopal, in 2013. He is currently working as Associate Professor in the School of Mathematics, Shri Mata Vaishno Devi University, Katra, (India) from August 2018. He published/presented around 150 research papers in reputed International/National Journals and Conferences, 03 Books and 17 Book Chapters in the area of Nonlinear Systems, Soft Computing and Image Processing etc. Also, he organized Faculty Development Programs (FDP), International /National Conferences and Workshops. His area of research includes Non-linear Systems, Image Processing, Soft Computing and Intelligent Control Systems, etc. He is managing editor, associate editor and reviewer in various reputed journals and conferences. He is life member of the Computer Society of India (CSI), International Association of Physical Sciences (IAPS), Soft Computing Research Society (SCRS), Bharata Ganita Parishad (BGP) and IAENG and Member of IEEE and ACM.

## Educational Qualification:

| S. No. | Qualification | Division | University/Institution |
|--------|---------------|----------|------------------------|
| 01. | High School | I | U P Board |
| 02. | Intermediate | II | U P Board |
| 03. | B.Sc. (PCM) | I | Dr. RML University Ayodhya |
| 04. | M.Sc. (Gold Medalist) (Mathematics & Statistics) | I | Dr. RML University Ayodhya |
| 05. | M.Sc. (Mathematics & Computing) | I | IIT Guwahati |
| 06. | CSIR (NET) | ------ | CSIR |
| 07. | Ph.D. | ------ | Barkatullah University, Bhopal |

**Teaching Experience:**

| Name of Institution | Position | From | To | Total Years | Basic Pay & Pay Scale with AGP |
|---|---|---|---|---|---|
| RRPG College Amethi, Sultanpur | Lecturer | 01 Sep-2003 | 31 May-2006 | 02years 09 months | Rs. 8000.00 (Fix) |
| LNCT- Bhopal (M.P.) (An AICTE approved Engg. College) | Assistant Professor | 08 July-2008 | 22 April-2015 | 06 years 09 months | Rs.15600-39100 with AGP 6000 |
| Madhav Institute of Technology and Science, Gwalior (M.P.) | Assistant Professor | 23 April-2015 | 11 August 2018 | 03 year 04 months | Rs.15600-39100 with AGP 6000 |
| Shri Mata Vaishno Devi University, Katra (J&K) | Associate Professor | 17 Aug. 2018 | Till Date | --------- | Rs. 1,31,400 (7th Pay Scale) |

**Academic and Administrative Works:**

[1]. **Head** of School of Mathematics, from 30th Aug. 2019-29th August 2022, at Shri Mata Vaishno Devi University, Katra.

[2]. **Chairman** of Board of Study (BoS) of School of Mathematics from Aug. 2019-Aug. 2022, at Shri Mata Vaishno Devi University, Katra.

[3]. **Chairman** of School Research Committee (SRC) of School of Mathematics Aug. 2019-Aug. 2022, at Shri Mata Vaishno Devi University, Katra.

[4]. **Chairman** of Academic Affair Committee (AAC) of School of Mathematics Aug. 2019-Aug. 2022.

[5]. **Member Secretary** of Committee constituted for short-listing the application forms received for Assistant Professor (on contractual basis) in School of Mathematics.

[6]. **Member** of Institutional Innovation Council (IIC), at Shri Mata Vaishno Devi University, Katra.

[7]. **Joint Warden, Basohli Hostel (2018-2020)**, at Shri Mata Vaishno Devi University, Katra.

[8]. Member of **ERP Committee** at Shri Mata Vaishno Devi University, Katra.

[9]. Member of **Examination Reforms Committee (AICTE recommendations /guidelines)** at Shri Mata Vaishno Devi University, Katra.

[10]. Member of **House Allotment Committee** at Shri Mata Vaishno Devi University, Katra.

[11]. Member of **Review and Performance of Housekeeping Committee** at Shri Mata Vaishno Devi University, Katra.

[12]. Member of **BOS**, Department of Applied Mathematics, MITS Gwalior.

[13]. Member of **Scrutiny Committee** for Teaching and Non-Teaching Post at MITS Gwalior.

[14]. Work as **Warden, Hostel No.02**, at Madhav Institute of Technology and Science, Gwalior.

[15]. Appointed as Departmental **NSS Coordinator** at Madhav Institute of Technology and Science, Gwalior, M.P.

[16]. Appointed as Departmental **SWAYAM** course Coordinator at Madhav Institute of Technology and Science, Gwalior, M.P.

[17]. Appointed as Departmental **MOODLE** Coordinator at Madhav Institute of Technology and Science, Gwalior, M.P.

[18]. Appointed as Departmental **Web Coordinator** at Madhav Institute of Technology and Science, Gwalior, M.P.

[19]. Appointed as Departmental Coordinator for the online program associated with **IIT Bombay**, at Madhav Institute of Technology and Science, Gwalior, M.P.

[20]. Class coordinator of **BE-I$^{st}$ Year**, (Information Technology, Chemical Engineering, Electronics and Telecommunication and Biotechnology) at Madhav Institute of Technology and Science, Gwalior, M.P.

[21]. Mentor of **BE-I$^{st}$ Year**, (Backlog Students) at Madhav Institute of Technology and Science, Gwalior, M.P.

[22]. **Group Leader of Anti-Ragging Duties**, at Madhav Institute of Technology and Science, Gwalior, M.P.

[23]. Member of **BE-I$^{st}$ Year**, Time Table Committee at Madhav Institute of Technology and Science, Gwalior, M.P.

**MOOCs Certified Courses (Completed):**

[1]. Engineering Calculus and Differential Equations (HKU11x): University of Hong Kong, 2019.

[2]. Linear Algebra-Foundations to Frontiers (UT.5.05x): The University of Texas, 2019.

[3]. Modern Algebra, National Programme on Technology Enhanced Learning (NPTEL) certificate, offered by **IIT Kanpur (Prof. Manindra Agarwal, Instructor), Secured First Rank in this Course,** Aug.-Oct. 2019.

[4]. MATLAB Programming for Numerical Computation, NPTEL Course offered by IIT Madras, Jan-Mar 2020.

[5]. NBA Accreditation and Teaching-Learning in Engineering, NPTEL Course offered by IISc Bangalore, Jan-Apr 2020.

[6]. Mathematical Modelling: Analysis and Applications, NPTEL Course offered by IIT Roorkee, Sep.-Oct. 2020.

[7]. Multivariable Calculus, NPTEL Course offered by IIT Roorkee, Jan.-March. 2021.

[8]. Theory of Computation, NPTEL Course offered by IIT Kanpur, July-Dec., 2021.

[9]. Introduction to Abstract and Linear Algebra, NPTEL Course offered by IIT Kharagpur, July-Dec., 2021.

[10]. An Invitation to Topology, NPTEL Course offered by IIT Madras, January-April 2022.

**Research Projects:**

| S. No. | Name of Project | Funding Agency | PI/ Co-PI | Amount (Rs.) & Duration | Status |
|---|---|---|---|---|---|
| 1. | Department of Science & Technology - Fund for Improvement of S&T (DST-FIST) Program-2020 | DST | PI | Rs. 2,800,000/-<br><br>(2021-2025) | Running |

| 2. | Plant Leaves Disease Classification Using Computational Intelligence Techniques | AICTE | PI | Rs. 4,96,854/- (2020-2023) | Running |
| 3. | Theoretical and Numerical Study of the Adaptive Control Design for Uncertain Nonlinear Systems Using Soft Computing Approach | SERB (MATRICS) | PI | Rs. 6,60,000/- (2022-2025) | Running |
| 4. | National Mathematics Day | JK Science & Technology & Innovation Council | PI | Rs. 50,000/- (2020) | Completed |

**Training Programs/Workshops/Conferences/Summer/Winter School Organized etc:**

| S. No. | Month & Year | Name of Institute /University | Convener/Coordinator/ Co-coordinator/ Organizing Secretary | Name of the Program |
|---|---|---|---|---|
| 01. | 26-27 March 2010 | Lakshmi Narayan College of Technology, Bhopal | **Co-Coordinator**- National Conference RTSCN | Recent Trends in Soft Computing and Networks |
| 02. | 08 Nov. 2014 | Lakshmi Narayan College of Technology, Bhopal | **Organizing Secretary-** IEEE International Conference | International Conference Computational Intelligence and Computer Networks |
| 03. | 21-25 Jan. 2019 | Shri Mata Vaishno Devi University, Katra | **Coordinator**- One Week FDP (MHRD Sponsored) | Teaching Sciences and Mathematics |
| 04. | 25-26 Oct. 2018 | Shri Mata Vaishno Devi University, Katra | **Co-Convener:** International Conference ICRTAET; Sponsored by (SMVDU-TBIC & TEQIP-III) | 5th Int. Conf. on Recent Trends and Advancements in Engg. and Technology (ICRTAET) |
| 05. | 13-14 Dec. 2019 | Shri Mata Vaishno Devi University, Katra | **Convener-** Two days' National Conference RTMS | Recent Trends in Mathematical Sciences- 2019 |
| 06. | 17-18 Jan. 2020 | Shri Mata Vaishno Devi University, Katra | **Co-Convener-** International Conference ICRTAET; Sponsored by (SMVDU-TBIC & TEQIP-III) | 6th Int. Conf. on Recent Trends and Advancements in Engg. and Technology (ICRTAET) |

| 07. | 21-22 Decembe r 2020 | Shri Mata Vaishno Devi University, Katra | **Convener-** Two days' International Conference on MSCI | International Conference (Virtual Mode) on Mathematical Sciences and Computational Intelligence |
|---|---|---|---|---|
| 08. | 27 Sep.- 01 Oct. 2021 | Shri Mata Vaishno Devi University, Katra | **Convener-** One Week FDP (FDC Sponsored) | One Week FDP on Mathematics and Its Application in Science and Engineering |
| 09. | 21-22 Dec. 2021 | Shri Mata Vaishno Devi University, Katra | **Convener-** Two Day Webinar on National Mathematics Day (Sponsored by J&K Science Technology Innovation & Council) | Two-Day Webinar on Celebration on National Mathematics Day (Sponsored by J&K Science Technology Innovation & Council) |
| 10. | March 2022 (Propose d) | Shri Mata Vaishno Devi University, Katra | **Convener-** One Week Webinar on Life and Work of Srinivasa Ramanujan (Sponsored by J&K Science Technology Innovation & Council) | One Week Webinar on Life and Work of Srinivasa Ramanujan (Sponsored by J&K Science Technology Innovation & Council) |

**Workshops /FDP/Training Programs/Summer/Winter School Attended:**

| S. No. | Month & Year | Institute /Industry | Sponsored by | Name of the Course |
|---|---|---|---|---|
| 01. | Dec. 2008 | Sardar Vallabhbhai National Institute of Technology (SVNIT) Surat, 2008 | AICTE Sponsored Staff Development Programme | Applications of Mathematical Sciences and Soft Computing |
| 02. | July 2009 | Banaras Hindu University (BHU), Varanasi, 2009 | DST Sponsored National Workshop Cum Training Prog. | Advanced Numerical Techniques and Applications |
| 03. | July 2009 | Jai Narain College of Technology, Bhopal, 2009 | ISTE Approved Short Term Training Programme | Applications of MATLAB in Science and Technology |
| 04. | Feb. 2010 | VNS Institute of Technology, Bhopal, 2010. | AICTE Sponsored Staff Development Programme | Recent Trends and Practices in Data Mining and Data Warehousing Technique |
| 05. | July 2010 | Truba Institute of Engineering and Information Technology, Bhopal | Indian Society for Technical Education (ISTE) and Wipro | Mission 10X |

| 06. | Dec. 2011 | Madhav Institute of Technology and Science, Gwalior | AICTE Sponsored Staff Development Programme | Soft Computing Tech. for Improvement of Processes and Systems in Chemical Engg. |
|---|---|---|---|---|
| 07. | Jan. 2012 | Lakshmi Narain College of Technology, Bhopal | Tata Consultancy Services | Data Warehousing |
| 08. | Jan. 2013 | Maulana Azad National Institute of Technology (MANIT), Bhopal | TEQIP-II | Intelligent Computing Techniques in Data Mining |
| 09. | May 2013 | Maulana Azad National Institute of Technology (MANIT), Bhopal | TEQIP-II | Workshop on Theory and Practice in Natural Language Processing |
| 10. | June 2013 | Rajiv Gandhi Proudyogiki Vishwavidyalaya, M.P. | AICTE Short Term Training Program Under TEQIP-II | Wireless Digital Communication |
| 11. | Feb. 2014 | Lakshmi Narain College of Technology, Bhopal | Vedisoft Academy, Bhopal | Linux Training Workshop |
| 12. | Jan. 2015 | EDI Ahemdabad and CRO, Rolta Incubation Centre MANIT, Bhopal | DST, Govt. of India and NSTEDB | FDP on Entrepreneurship |
| 13. | Sep. 2015 | Madhav Institute of Technology and Science, Gwalior, M.P. | DTE, Govt. of Madhya Pradesh | Research Methodology in Entrepreneurship Management |
| 14. | 14-15 Oct 2015 | Madhav Institute of Technology and Science, Gwalior, M.P. | TEQIP-II | National Workshop on Application of MATLAB in Electrical Engineering |
| 15. | 12-16 March 2018 | Madhav Institute of Technology and Science, Gwalior, M.P. | TEQIP-III | Outcome Based Education |
| 16. | 03-07 Dec. 2018 | IIM Trichy Professional Development Training under | TEQIP-III | Professional Development Training |
| 17. | 26 April 2020 | Shri Rajasthani Seva Sangh's Smt. Parmeshwaridevi Durgadutt Tibrewala | IQAC & Department of Commerce | Quiz on Awareness: COVID -19 |

| | | Lions Juhu College of Arts, Commerce and Science | | |
|---|---|---|---|---|
| 18. | 23-24th May 2020 | Faculty of science, R.R.P.G. College Amethi, (U. P.), India. | R.R.P.G. College Amethi, (U. P.) | International Webinar on Covid-19 |
| 19. | 03-07 June 2020 | Bannari Amman Institute of Technology, Chennai | Anna University, Chennai | International FDP Mathematical Modeling in Multidisciplinary Domain (Online) |
| 20. | 10 June 2020 | Department of Computer Engg. P.V. P.P. College of Engg. Mumbai. | P.V. P.P. College of Engg. Mumbai | Completed National Level Quiz on NBA |
| 21. | 10 June 2020 | Department of Computer Engg. P.V. P.P. College of Engg. Mumbai. | P.V. P.P. College of Engg. Mumbai | Completed National Level Quiz on NAAC |
| 22. | Aug. 12-Aug. 25, 2020 | Teaching Learning Centre Ramanujan College, University of Delhi (MHRD, PMMMNMTT) | MHRD, Sponsored Under PMMMNMTT, Ramanujan College, Uni. of Delhi | Quantitative Methods for Data Science |
| 23. | July. 25-Aug. 10, 2020 | Teaching Learning Centre Ramanujan College, University of Delhi (MHRD, PMMMNMTT) | MHRD, Sponsored Under PMMMNMTT, Ramanujan College, Uni. of Delhi | Quantitative Managing Online Classes and Co-creating MOOC's 3.0 |
| 24. | 04-07 Dec., 2020 | BVB College of Engineering & Technology Hubballi | National Project Implementation Unit (NPIU) | 4 Days Online Workshop on Train the Trainers on Examination Reforms |
| 25. | Jan., 30 - Feb., 14, 2021 | Teaching Learning Centre Ramanujan College, University of Delhi (MHRD, PMMMNMTT) | MHRD, Sponsored Under PMMMNMTT, Ramanujan College, Uni. of Delhi | Advanced Research Methodology Tools and Techniques |
| 26. | 25th – 28th August 2021 | Complex Systems and Dynamical Group, Indian Institute of Technology, Madras | Indian Institute of Technology, Madras | Networks and Dynamical Systems: An International Workshop |

**RESEARCH GUIDANCE:**

**(1) Ph.D. SUPERVISED** *(Awarded/Submitted/Ongoing)***:**

| S. No. | Name of Student | Title of Ph.D. Thesis | Supervisor / Co-supervisor | Status | Remark |
|---|---|---|---|---|---|
| 1. | K. Deshmukh | Object Retrieval and Matching of Content Based Images Using Different Graphical Models | Supervisor | Awarded in 2018 | Assistant Professor in K.J. Somaiya Col. of Engg. Mumbai |
| 2. | Siddharth Singh Chouhan | Plant Leaves Disease Segmentation and Classification using Soft Computing Approaches | Co-supervisor | Awarded in 2020 | Assistant Professor in VIT Bhopal |
| 3. | Jasvinder Pal Singh | Multi-Gait Occlusion Reconstruction and Identification using Hybrid-NN | Co-supervisor | Awarded in 2020 | Assistant Professor in Thapar Institute of Engg. & Tech. Patiala |
| 4. | Gourav Kumar | Hybrid Evolutionary Neural Networks Approach for Stock Market Prediction | Co-supervisor | Awarded in 2023 | RA in ISRO (CU Jammu) |
| 5. | Swati Jasrotia | Generalized Sequence Spaces and their Matrix Transformations | Co-supervisor | Submitted | |
| 6. | Rahul Kumar | Design of Adaptive Controllers for Uncertain Nonlinear Discrete-Time Systems with Unknown Disturbances using Soft Computing Techniques | Supervisor | Submitted | |
| 7. | Arun Bali | Design of Some Adaptive Controllers for Non-Linear Systems Using Computational Intelligence Techniques | Supervisor | Ongoing | |

**(2) POST GRADUATE**

| S. No. | Name of Students | Title of Dissertation/Thesis | Status |
|---|---|---|---|
| 5. | K. Chopra | Image Authentication Using Slepian Wolf Coding | Completed |

| 6. | P. Srivastava | Noise Removal Using First Order Neighbourhood Mean Filter | Completed |
|---|---|---|---|
| 7. | R.K. Sharma | Face Detection and Matching using Dynamic Region Merging | Completed |
| 8. | M. Verma | Image Compression using Discrete Wavelet Transform and JPEG with Arithmetic Coding | Completed |
| 9. | G S Chandel | Improve Efficiency of FP-Growth Tree using Database Projection for Dynamic Dataset | Completed |
| 10. | N. Mishra | Medical Image Registration Using Genetic Algorithm | Completed |
| 11. | R. Gupta | Video Segmentation using k-mean Algorithm on Moving Sliding Window | Completed |
| 12. | G S Dhakad | Image segmentation using signed pressure force function based active contour models | Completed |
| 13. | Rushali and Pooja Devi | Convergence Analysis of Particle Swarm Optimization | Completed |
| 14. | R. Sharma and Twinkle Gandral | Convergence Analysis of Particle Swarm Optimization | Completed |
| 15. | Anuradha and Sakshi Sharma | Study of Non-Linear Dynamical Systems | Completed |
| 16. | Poonam Kumari, Simran and Aarti | Cryptography | Completed |
| 17. | Sonia Suchal, Ishani Mahajan | Lyapunov Stability Criteria | Completed |
| 18. | Rupali, Amit Sharma & | Study of Dynamical Systems | Completed |
| 19. | Manju Devi, Kritika Sharma | Applications of Finite Fields | Completed |
| 20. | Abhishek, Nikhil Sharma | Study of Linear Dynamical Systems | Completed |
| 21. | Akshita Sharma, Satbir Singh | Application of Laplace Transform for Mechanical Systems | Ongoing |
| 22. | Simran Mantokia, Vasundhra Parihar | Analysis of State Space Systems | Ongoing |

**Computer Skills:**

**[1].** **Programming Languages**: C, C++.

**[2].** **Operating Systems**:      Windows 8, Windows 7, Windows *XP,* Windows vista.

**[3].** **Software Packages**:      MATLAB, LaTeX, Maple and Mathematica.

**RESEARCH PUBLICATIONS:**

**A1: Books:**

[1]  V. Sakhre and **Uday Pratap Singh,** "Reactive Distillation Advanced Control Using Neural Networks," **Publisher:** De Gruyter, **ISBN:978-3110656145.**

[2]  **Uday Pratap Singh,** S. Jain and Michael Sipser, "Theory of Computation (RGTU), 2/e" **Publisher: Cengage Learning, ISBN: 978-8131514771.**

[3]  **Uday Pratap Singh,** A. Tiwari and R. K. Singh, "Soft Computing-Based Nonlinear Control Systems Design", **Publisher: IGI Global, ISBN: 9781522535317, DOI: 10.4018/978-1-5225-3531-7, Feb. 2018.**

**A2:  Book Chapters:**

[4]  R. Kumar, **Uday Pratap Singh**, A. Bali and S.S. Chouhan, "IT2 Neuro Fuzzy Wavelet Network with Jordan Feedback Structure for the Control of Aerial Robotic Vehicles with External Disturbances", The Fourth International Conference on Artificial Intelligence and Computational Intelligence (AICI'2023) (Springer), Hanoi, Vietnam, Feb. 18-19, 2023.

[5]  **Uday Pratap Singh,** S. Jain, M. Parmar and R. K. Singh, "Modified Differential Evolution Algorithm Based Neural Network for Nonlinear Discrete Time System", Recent Developments in Intelligent Communication Applications **(IGI Global), (SCOPUS)**, **Chapter:16, pp.397-420, 2016, ISBN:9781522517856.**

[6]  D. Dubey, D. Dubey and **Uday Pratap Singh, "**Performance of Service-Oriented Architecture (SOA): Medical Image Systems for Chronic diseases", Exploring Enterprise Service Bus in the Service-Oriented Architecture Paradigm **(IGI Global), (SCOPUS), Chapter: 20, pp.327-343, 2016, ISBN: 9781522521570.**

[7]  **Uday Pratap Singh** and S. Jain, "Object Extraction Using Topological Models from Complex Scene Image", Advanced Concepts in Real-Time Image and Video Processing, **(IGI Global), Chapter: 13, pp. 335-357,2017, ISBN:9781522528487.**

[8]  **Uday Pratap Singh**, S. Jain, A. Tiwari and R.K. Singh, "Nature Inspired Based Adaptive Neural Network Approximation for Uncertain System", Emergent Research on the Application of Optimization Algorithms, **(IGI Global), Chapter: 19, pp. 439-461, 2017, ISBN: 9781522529903.**

[9]  **Uday Pratap Singh**, S. Jain, D. K. Jain and R.K. Singh, "An Improved RBFNN Controller for a Class of Nonlinear Discrete-Time Systems with Bounded Disturbance", Emergent Research on the Application of Optimization Algorithms, **(IGI Global), Chapter: 28, pp. 439-461, 2017, ISBN: 9781522529903.**

[10]  B. Sowkartika, A. Tiwari and **Uday Pratap Singh**, "Utility and Significance of Vague Set Theory and Advanced Optimization Mechanisms for Uncertainty Management", (Approved) Soft Computing-Based Nonlinear Control Systems Design.**(IGI Global), Chapter:10, pp. 191-219, 2018, ISBN: 9781522535317, DOI: 10.4018/978-1-5225-3531-7.ch010.**

[11]  S. S. Chauhan, U. Sharma and **Uday Pratap Singh**, "Soft Computing Approaches for Image Segmentation", (Approved),Soft Computing-Based Nonlinear Control Systems Design. **(IGI Global), Chapter: 14, pp. 286-310, 2018, ISBN: 9781522535317, DOI: 10.4018/978-1-5225-3531-7.ch014.**

[12]  **Uday Pratap Singh**, S. Jain, D. Dubey and R.K. Singh, "Momentum and Resilient Based Level Set for Medical Image Segmentation", (Approved) Intelligent Multidimensional Data and Image Processing. **(IGI Global), Chapter: 15, pp. 311-342, 2018, ISBN: 9781522535317, DOI: 10.4018/978-1-5225-3531-7.ch015.**

[13]  S. Agarwal, R.K. Singh and **Uday Pratap Singh**, "Fuzzy Counter Propagation Network for Free Hand Sketches Based Image Retrieval", Soft Computing: Theories and Applications **(Springer, SCOPUS Index)**, Bundelkhand University Jhansi (U.P.), 22-24 Dec. 2017.

[14]  J S Kumre, P. Gupta, **Uday Pratap Singh** and Rajeev Kumar Singh, "An Efficient Contrast Enhancement Technique Based on Firefly Optimization", Soft Computing: Theories and Applications **(Springer SCOPUS Index)**, Bundelkhand University Jhansi (U.P.), 22-24 Dec. 2017.

[15]  J.S. Kumare, P. Gupta, **Uday Pratap Singh** and R.K. Singh, "An Efficient Brightness preserving Contrast enhancement technique using Discrete wavelet transform and Singular value decomposition wavelet transform and Singular value decomposition",

Microelectronics, Computing & Communication Systems (**MCCS- 2017, Springer SCOPUS Index**), 13-14 May, Ranchi.

[16] R.K. Singh, S. Agarwal, **Uday Pratap Singh** and S. Jain, "Intelligent Image Retrieval via Deep Learning Techniques", Deep Learning for Image Processing Applications, IOS Press, 2017, (**SCOPUS Index**) DOI: 10.3233/978-1-61499-822-8-68.

[17] P. Agarwal, A. Tiwari and **Uday Pratap Singh,** "An Innovative Design of RF Energy Harvester for Wireless Sensor Devices", Soft Computing-Based Nonlinear Control Systems Design.**(IGI Global), Chapter:15, pp. 311-342, 2018, ISBN: 9781522535317, DOI: 10.4018/978-1-5225-3531-7.ch015.**

[18] J.S. Kumare, P. Gupta, **Uday Pratap Singh** and R.K. Singh "An Efficient Brightness preserving Contrast enhancement technique using Discrete wavelet transform and Singular value decomposition wavelet transform and Singular value decomposition", Microelectronics, Computing & Communication Systems (**MCCS- 2019, Springer SCOPUS Index**), 13-14 May, Ranchi.

[19] S. Agarwal, R.K. Singh and **Uday Pratap Singh** "Fuzzy Counter Propagation Network for Freehand Sketches-Based Image Retrieval" Soft Computing: Theories and Applications, Advances in Intelligent Systems and Computing, DOI.: 10.1007/978-981-13-0589-4-17, **2019 Springer SCOPUS Index**), 22-24 Dec, Jhansi.

[20] P. Gupta, J.S. Kumare, **Uday Pratap Singh** and R.K. Singh "An Efficient Contrast Enhancement Technique Based on Firefly Optimization", Soft Computing: Theories and Applications, Advances in Intelligent Systems and Computing, DOI.: 10.1007/978-981-13-0589-4-18, **2019 Springer SCOPUS Index**), 22-24 Dec, Jhansi.

**B1: PATENT FILED / PUBLISHED:**

[1]. A Method and A System for Human Identification Human Identification in Multi-Gait Scenario, (Application No.: 201911029219 A).

[2]. Device to Automatically Configure a Firewall and Monitor Network, (Application No.: 201921017918 A).

**B2: DATA SET:**

[1]. S.S. Chouhan, A. Koul, **Uday Pratap Singh**, and S. Jain, "A Database of Leaf Images: Practice Towards Plant Conservation with Plant Pathology", MENDELEY DATASET, https://data.mendeley.com/datasets/hb74ynkjcn/1, 6th June 2019, DOI:10.17632/hb74ynkjcn.1.

[2]. J.P. Singh, S. Jain, S. Arora and **Uday Pratap Singh**, "Dataset for Human Recognition under Multi-Gait Scenario", MENDELEY DATASET, DOI: 10.17632 /py4zw6g 7xc.2, https://data. mendeley.com/datasets /py4zw6g7xc/2, 6th June 2019.

**B3: INTERNATIONAL / NATIONAL JOURNALS:**

**Cumulative Impact Factor: 117.78**

[1]. Arun Bali, S.S. Chouhan, G. Kumar, R. Kumar, **Uday Pratap Singh**, "Adaptive fault-tolerant control for pure-feedback stochastic nonlinear systems with sensor and actuator faults", Circuits, Systems, and Signal Processing **(Springer), IF: 2.31**, DOI:10.1007/s00034-023-02366-7, **ISSN: 1531-5878.**

[2]. Arun Bali, **Uday Pratap Singh,** Rahul Kumar, and S. Jain, "Adaptive Finite-Time Fault-Tolerant Control for Switched Nonlinear Systems with Actuator Fault and Dead-Zone via Prescribed Performance", European Journal of Control (**Elsevier**), **IF: 2.65**, DOI: 10.1016/j.ejcon.2023.100799, **ISSN: 0947-3580.**

[3]. S. Solanki, S.S. Chouhan, **Uday Pratap Singh**, and S. Jain, "Brain Tumor Detection and Classification using Intelligence Techniques: An Overview" **IEEE Access** (**IEEE**), **IF: 3.58**, DOI: 10.1109/ACCESS.2023.3242666, 2023, **ISSN: 1886-1784.**

[4]. S. Solanki, Uday Pratap Singh, S.S. Chouhan, and S. Jain, "Brain Tumor Detection and Classification by using Deep Learning Classifier", International Journal of Intelligent Systems and Applications in Engineering **(SCOPUS),** Vol. 11, No. 2, pp. 279–292 ISSN: 2147-6799.

[5]. Arun Bali, **Uday Pratap Singh,** Rahul Kumar, and S. Jain, "Hybrid Neural Network Control of Uncertain Switched Nonlinear Systems with Bounded Disturbance", International Journal of Robust and Nonlinear Control (**Wiley**), **IF: 3.897, 2022, ISSN:1099-1239,** DOI:10.1002/rnc.6533.

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[23]. **Uday Pratap Singh**, "RNG Based Image Segmentation and Object Extraction" National Conference on Advances in Mathematical Applications for Engineering & Technology, at Madhav Institute of Technology and Science Gwalior, Dec. 2014.

[24]. S. Jain, A. Kusumakar and **Uday Pratap Singh**, "An Application of Fuzzy Logic for IPL-5 Cricket League Prediction", National Conference on Computational Intelligence and Soft Computing, 2012, pp. 85-90.

[25]. R. Srivastava and **Uday Pratap Singh**, "Distribution Approach of Intrusion Detection System: Survey", International Conference On Emerging Trends and Technology, 2012.

[26]. **Uday Pratap Singh**, K. Saxena and S. Jain, "Comparison of Different color Spaces and its Applications", International Conference on Concurrent Techno and Enviro. Search, Search and Research Youth Congress, pp. 16, 2010.

[27]. **Uday Pratap Singh**, R. Pandit and R. Shukla, "Content Based Image Retrieval Using Mean Shift Algorithm & Permuto Metric Measure", International Conference on Recent Trends in Soft Computing and Information Technology, pp. 112-116, 2010.

[28]. **Uday Pratap Singh**, A. Rai "Biometric Techniques" National Conference on Soft Computing in Electrical Engineering (SCTEE), Vol. 1, pp.73, 2010.

[29]. S. Jain, **Uday Pratap Singh** and V. Trivedi "Texture Based Image Retrieval Using Gray Level Co-occurrence Matrix (GLCM)" National Conference on Recent Trends in Soft Computing & Network, pp.14-20, 2010.

[30]. G.F. Ahmed, **Uday Pratap Singh** and R. Barskar "Content Based Image Retrieval: A Review" National Conference on Recent Trends in Soft Computing & Network, pp. 223-228, 2010.

[31]. **Uday Pratap Singh,** S. Jain and P. Pandey, "Object Retrieval of Color Images Using Mean Shift Algorithm," National Conference on Recent Trends in Soft Computing & Network, pp. 223-228, 2010.

[32]. **Uday Pratap Singh**, "Image Matching Using Low Level Visual Features", National Conference on Emerging Technology Trends, pp. 64-69, 2010.

[33]. P. Srivastava, A. Kusmakar and **Uday Pratap Singh**, "Genetic Algorithm for Travelling Salesman Problem Using Mixed Cross-Over" National Seminar on Mixed Signal VLSI Signal, 20-21 July 2012.

**Awards and Honors:**

[1]. *Reviewer* of IEEE Transactions on Neural Systems & Rehabilitation Engineering

[2]. *Reviewer* of International Journal of Fuzzy Systems, (Springer).

[3]. *Reviewer* of IEEE Access, (IEEE).

[4]. *Reviewer* of Biomedical Research, (Allied Academies Journals).

[5]. *Reviewer* of IGI Global (An International Publisher).

[6]. **Expert Member**, of Union Public Service Commission **(UPSC)**, New Delhi.

[7]. **Editor-in-Chief,** Pioneer Journal of Computer Science and Engineering Technology, ISSN: 2231-184X.

[8]. **Managing Editor** of Oriental Journal of Mathematics, ISSN (Print): 0975-7740, ISSN (Online): 0975-7759.

[9]. **Associate Editor** of National Journal of Engineering Science and Management, ISSN: 2249-0264.

[10]. **Member of Editorial Board** of International Journal of Advanced Computer Research, ISSN: 2277-7970 (Online), ISSN: 2249-7277 (Print).

[11]. **Technical Committee member** of 2022 the 8th International Conference on Virtual Reality (ICVR 2022), held during July 3-5, 2022 in Nanjing, China.

[12]. **Technical Committee Member** of 9th International Conference on Software and Computer Applications (ICSCA 2020), held in Langkawi, Malaysia during February 18-21, 2020.

[13]. Member of Scope Database (Journal and Indexing)-International Advisory Board Certificate **ID: IAB0000199.**

[14]. Received Letter of Appreciation for *National Conference on Recent Trends in Soft Computing and Network, 26-27 March-2010*, work as Co-Coordinator, at Lakshmi Narain College of Technology Bhopal, M.P.

[15]. **Best Paper Award** at *VNS Institute of Technology*, Bhopal in **NCETT March-2010**.

[16]. **Best Paper Award** at *All Saints College of Technology*, *Bhopal* in 6th National Level Technical Symposium, **Vision Tech-2009**.

[17]. Received Letter of Appreciation for *Planet Engineer-2009* (A National Level Technical Mega Event), and work as Co-Coordinator, Lakshmi Narain College of Technology Bhopal, M.P.

## Invited Talk:

[1]. Delivered an Invited Talk: **"Lyapunov Based Stability Analysis of Non-linear Dynamical Systems"**, in the National Conference on Mathematical and Computational Analysis, 28-30 Jan., 2023, Department of Mathematics, T.D.P.G. College Jaunpur, U.P.

[2]. Delivered an Invited Talk: **"Adaptive Control for Non-linear System under strict and non-strict feedback structure with faults"**, in the International Conference on Innovations in Computational and Physical Sciences for Sustainable Development (ICPSSD-2022), 21-23 Dec., 2022, Vijayanagara Sri Krishnadevarya University, Ballari Karnataka.

[3]. Delivered an Invited Talk: **"Adaptive tracking control of Nonlinear Systems"** as a keynote speaker in the Symposium on Recent Trends and Applications of Mathematics and Statistics in Engineering (RTAMSE-2022) held on March 24, 2022, organized by School of Engineering and IT, **Manipal Academy of Higher Education, Dubai Campus, UAE**.

[4]. Delivered an Invited Talk: **"Stock Market Forecasting using Computational Intelligence Technique"**, Online Two Days International Conference on "Soft Computing Techniques & Communication Engineering", From 29-30 Jan., 2021.

[5].    Delivered an Invited Talk: **"Probability & Statistics for Data Science",** in AICTE Training and Learning (ATAL) FDP on Data Science on 2nd Nov. 2020 at Hindustan College of Engineering and Technology, Coimbatore.

[6].    **Key Note Speaker:** in Virtual online National Conference on Big Data and Intelligent Systems, organized by Lakshmi Narain College of Technology, Bhopal, 30 April, 2020.

[7].    Delivered an Invited Talk: **"How to write good Research Paper",** in One Week FDP on Research Methodology using R & E Views. Organized by Faculty Development Centre, Shri Mata Vaishno Devi University, Katra, April 2019.

[8].    Delivered an Invited Talk: **"Object Extraction and Matching from Complex Scene of Images",** in International Conference on Analysis and its Applications, Organized by Department of Mathematics, Jammu University (J&K), 16-18 December, 2019.

[9].    Delivered an Invited Talk: "**Applications of Nature Inspired Optimization Techniques**," in Two Week Winter School for Engineering Stream organized by Faculty Development Centre, Shri Mata Vaishno Devi University, Katra, 16 Feb-01 March 2019.

[10].    Delivered an Invited Talk: "**Convergence Analysis of PSO**", in One Week Faculty Development Program on Teaching Sciences and Mathematics organized by Faculty Development Centre, Shri Mata Vaishno Devi University, Katra, 21-25 Jan. 2019.

[11].    Delivered an Invited Talk: "Nature Inspired Optimization Techniques," in National Conference organized by **BHARATA GANITA PARISAD** at Lucknow University, Lucknow, 10-11 Nov. 2018.

[12].    Delivered an Invited Talk: "Sector Nonlinearity Based Fuzzy Model," in DST Sponsored National Conference on Fractional Calculus, Special Functions and Their Applications in Computer Science, organized by **Ramanujan Society of Mathematics and Mathematical Sciences** at T.D.P.G. College, Jaunpur (U.P.), 10-12 Nov. 2018.

[13]. Delivered an Invited Talk: "**Formal Language and Abstract Machines**," in DST Sponsored National workshop on Science Fare Creating Awareness, Interest, Motivation in Science and Mathematics for School Students and Teachers, organized by **Ramanujan Society of Mathematics and Mathematical Sciences** at T.D.P.G. College, Jaunpur (U.P.), 10-13 Nov. 2018.

[14]. Delivered an Expert Lecture: "**Group Theory and Its Applications**," at Lakshmi Narain College of Technology, Bhopal, 22 Sep. 2017.

[15]. Delivered an Expert Lecture: "**PoSET and Hasse Diagram**," at IES Engineering College, Bhopal, 22 Sep. 2017.

[16]. Delivered an Expert Lecture: "**Finite Field and It's Applications**," atIES Engineering College, Bhopal, 23 Sep. 2017.

[17]. Delivered an Invited Talk: "**Image Processing: A Mathematical Approach**," in National Conference on Emerging Trends and Technology, LNCT, Bhopal, 2016.

[18]. Delivered an Invited Talk: "**Object Extraction Using Low Level Features**," in National Conference on Emerging Trends and Technology, LNCT, Bhopal, 2016.

[19]. Delivered an Invited Talk: "**Formal Language and Automata Theory**," in National Conference on Emerging Trends and Technology, LNCT, Bhopal, 2015.

[20]. Delivered an Invited Talk: "**Algorithmic Analysis and Complexity Theory**," in National Conference on Emerging Trends and Technology, LNCT, Bhopal, 2015.

[21]. **Best Faculty Award** for Analysis and Design of Algorithm, by *SRIJAN-2014* at Ravindra Bhavan, Bhopal.

[22]. Delivered an Expert Lecture: *"Finite Basis Problem and Finite Field and its applications in Computer Science"* at Madhav Institute of Technology and Science, Gwalior (M.P.), from 12-14 April 2011.

[23]. Delivered an Expert Lecture: *"Theory of Computation"* at Madhav Institute of Technology and Science, Gwalior (M.P.), from 13-14 August 2010.

[24]. Delivered an Invited talk: **"*Finite Difference Method*"** AICTE sponsored staff development program on "Manufacturing Automation and Mechatronics" 6th -18th July 2009 at Samrat Ashok Technological Institute, Vidisha (M.P.).

[25]. Delivered an Invited talk: **"*Applications of MATLAB in Numerical Methods*"** ISTE and MPCST sponsored staff development program on "Applications of MATLAB for Engineers" July 2009.

**MEMBERSHIP:**

| S.No. | Name of Society | Period | Position | Membership No. |
|---|---|---|---|---|
| 01. | IEEE | 01/01/2023 To 31/01/2023 | Member | 91222373 |
| 02. | Soft Computing Research Society | 03/01/2023 To 03/01/2028 | Member | SCRS 900 |
| 03. | American Mathematical Society | 01/01/2023 To 31/12/2023 | Member | 991372536 |
| 04. | International Association of Physical Sciences | Life Member | Member | A22386 |
| 05. | Computer Society of India (CSI) | Life Member | Member | 01200986 |
| 06. | Bharata Ganita Parisad (BGP) | Life Member | Member | 580 |
| 07. | International Association of Engineer's (IAENG) | Life Member | Member | 105362 |

**LINKS:**

**YouTube Channel:**

**1. Abstract Algebra (MTL 6051):**
**https://www.youtube.com/playlist?list=PLA00S78M6ArjitERSWDgqCCQsPMzYMjrg**
**2. Engineering Mathematics-I (MTL 1025):**
**https://www.youtube.com/playlist?list=PLA00S78M6AriiBV-nWDcwGR6t-l0x2RMz**

**GOOGLE SCHOLAR:**

**https://scholar.google.co.in/citations?user=iTa_p_cAAAAJ&hl=en**

**RESEARCH GATE:**

## Research Area of Interest:

[1]. Nonlinear Systems
[2]. Soft Computing
[3]. Image Processing
[4]. Nature Inspired Algorithms

## Subjects Taught at UG, PG and Ph.D. Levels:

**P.G. (M.Sc./M.E./M.Tech.) / Ph.D. LEVEL:**

- Coding Theory
- Abstract Algebra
- Differential and Integral Equations
- Information Theory Coding
- Soft Computing
- Image Processing

**U.G. LEVEL (Integrated M.Sc./ B.E./B.Tech.):**

- Theory of Computation
- Analysis and Design of Algorithm
- Fundamentals of Computer Programming
- C Programming
- Discrete Structure
- Engineering Mathematics-I
- Engineering Mathematics-II
- Engineering Mathematics-III

**Personal Details:**

| | |
|---|---|
| Father Name: | Shri Ram Sumiran Singh |
| Marital Status: | Married |
| Postal Address: | Qtr. No. 203, Saraswati Sadan, |
| | SMVDU, Campus, Katra (J&K) |
| Tel No.: | 01991- 282510 (O) |
| | 01991- 286510 (R) |
| Email: | usinghiitg@gmail.com |

**Certificate:** It is certified that the information given above are correct to the best of my knowledge.

<div align="right">

**Sd/-**
**Uday Pratap Singh**
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**School of Mathematics**
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**Katra-182320, J&K (India)**

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