






Title	Dr.	First Name	HARENDRA PAL	Last Name	SINGH	Photograph 
Designation	Assistant Professor					
Address	Room No.-312, Third Floor, Rugby Sevens Building, G. C. Narang Marg, University Stadium, Cluster Innovation Centre, University of Delhi, Delhi-110007.					
Mobile Number	09891910248					
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Educational Qualifications						
Degree	Institution				Year	
B.Sc. (PCM)	C.C.S. University				2003	
M.Sc. (Mathematics)	C.C.S. University (Campus)				2005	
M.Phil.(Mathematics)	C.C.S. University (Campus)				2009	
Ph.D. (Mathematics)	I.I.T. Roorkee				2013	
Career Profile						
Institution		Designation			Year	
Cluster Innovation Centre (CIC University of Delhi)		Assistant Professor			2015-Onwards	
Administrative Assignments						
<ul style="list-style-type: none">  Departmental Purchase Committee  Infrastructure and Space Committee  Library Committee  Admission Committee 						

Areas of Interest / Specialization
<ul style="list-style-type: none"> ✚ Modeling and simulation. ✚ Stability analysis of dynamical systems. ✚ Robotics and control of dynamical systems. ✚ Fractional order linear and nonlinear systems and control.
Subjects Taught
<ul style="list-style-type: none"> ✚ Linear Algebra ✚ Ordinary Differential Equations ✚ Robotics ✚ Control Systems ✚ Calculus ✚ Partial Differential Equations
Research Guidance
<ul style="list-style-type: none"> ✚ Research Scholars (University of Delhi): Two (Oct. 2018 to Onwards) ✚ Research Scholars (Delhi Technological University): One (July 2017 to Onwards)
Publications Profile
<ul style="list-style-type: none"> ✚ H. P. Singh, A. Jain, A. Singh and S. Arora, “Influence of absorber plate shape factor and mass flow rate on the performance of the PVT system”, Applied Thermal Engineering, 156, pp. 692-701, Elsevier, 2019. ✚ M. Rani, N. Kumar and H. P. Singh, “Motion/force control scheme for electrically driven cooperative multiple mobile manipulators,” Control Engineering Practice, 88, pp. 52-64, Elsevier, 2019. ✚ M. Rani, N. Kumar and H. P. Singh, “Force/motion control of constrained mobile manipulators including actuator dynamics” International Journal of Dynamics and Control, https://doi.org/10.1007/s40435-019-00523-y, Springer, 2019. ✚ S. Kumar, C. Piciarelli and H. P. Singh, “Reconfiguration of PTZ camera network with minimum resolution”, Harmony Search and Nature Inspired Optimization Algorithms, pp. 869-878, Springer, 2019. ✚ N. Rathi, H. P. Singh and S. Kumar, “Modeling of a neural network based controller for vibration suppression of a building structure”, AIP Conference Proceedings 1975 (1), 030018, 2018. ✚ Manju Rani, Naveen Kumar and H. P. Singh, “Efficient position/force control of constrained mobile manipulators”, International Journal of Dynamics and Control, pp. 1-10, https://doi.org/10.1007/s40435018-0401-7, Springer, 2018. ✚ Pradeep, Akanshu Mahajan, Varun Bharti, H. P. Singh, Lalita Josyula and Pravesh Kumar, “Construction of a 3D map of indoor environment”, Procedia Computer Science, 125, pp.

124-131, Elsevier, 2018.

- # **H. P. Singh**, Surendra Kumar, Pravesh Kumar and Akanshu Mahajan, “Virtual experimental analysis of redundant robot manipulators using neural networks”, *Soft Computing: Theories and Applications. Advances in Intelligent Systems and Computing*, 584, pp. 21-30, Springer, 2018.
- # Pravesh Kumar, Millie Pant and **H. P. Singh**, “Solving nonlinear optimization problems using IUMDE algorithm”, *Soft Computing: Theories and Applications. Advances in Intelligent Systems and Computing*, 584, pp. 245-254, Springer, 2018.
- # Pravesh Kumar, Millie Pant, Musrrat Ali and **H. P. Singh**, “Enhanced DE with weighted base vector for unconstrained global optimization”, *Indian Journal of Science and Technology*, 10, pp. 1-16, 2017.
- # Akanshu Mahajan, **H. P. Singh** and N Sukavanam, “An unsupervised learning based neural network approach for a robotic manipulator”, *International Journal of Information Technology*, 9, pp. 1-6, Springer, 2017.
- # **H. P. Singh**, A. Mahajan, N. Sukavanam, V. Budhraj, S. Singh, A. Kumar, A. Vashisht, “Control of an autonomous industrial fire fighting mobile robot”, *DU Journal of Undergraduate Research and Innovation*, 1, pp.124-130, 2015. ISBN/ISSN NO. 2395-2334.
- # **H. P. Singh** “Simulation of Neural Network based Adaptive Compensator Control Scheme for Multiple Mobile Manipulators with Uncertainties”, *International Journal of Nonlinear Sciences and Numerical Simulation*, 15, pp. 1-8, De Gruyter, 2014. ISBN/ISSN NO. 2191-0294.
- # **H. P. Singh** and N. Sukavanam, “Stability analysis of robust adaptive hybrid position/force controller for robot manipulators using neural network with uncertainties”, *Neural Computing and Applications*, 22, pp. 1745-1755, Springer, 2013. ISBN/ISSN NO. 1433-3058.
- # **H. P. Singh** and N. Sukavanam, “Neural network based control scheme for redundant robot manipulators subject to multiple self-motion criteria”, *Mathematical and Computer Modelling*, 55, pp. 1275-1300, Elsevier, 2012. ISBN/ISSN NO. 0895-7177.
- # **H. P. Singh** and N. Sukavanam, “Simulation and stability analysis of neural network based control scheme for switched linear systems”, *ISA Transactions*, 51, pp. 105-110, Elsevier, 2012. ISBN/ISSN NO. 0019-0578.
- # **H. P. Singh** and N. Sukavanam, “Intelligent robust adaptive trajectory and force tracking control for holonomic constrained nonholonomic mobile manipulators”, *Advanced Science Letters*, 16, pp. 313-321, American Scientific Publishers, 2012. ISBN/ISSN NO. 1936-7317.
- # **H. P. Singh** and N. Sukavanam, “Control of robot manipulators in task-space under uncertainties using neural network”, *International Journal of Intelligent Engineering Informatics*, 1, pp. 142-155, Inderscience, 2011. ISBN/ISSN NO. 1758-8723.
- # **H. P. Singh** and N. Sukavanam, “Neural network based adaptive compensator for motion/force control of constrained mobile manipulators with uncertainties”, in proceeding of IEEE HIS-2011, Malacca, Malaysia, 5-8 December 2011.
- # **H. P. Singh**, N. Sukavanam and Vikas Panwar, “Neural network based compensator for robustness to the robot manipulators with uncertainties” in proceeding of IEEE ICMET-

2010, Singapore during 10-12 September, pp. 444-448, 2010.

- ✚ H. P. Singh and N. Sukavanam, “Uncertain bound estimation for robustness to robot manipulators using feedforward neural network” in proceeding of International Conference on Computational Intelligence and Communication Networks (IEEE CICN- 2010), Bhopal during 26-28 November, pp. 133-138, 2010.

Research Projects (Major Grants/Research Collaboration)

- ✚ UGC Start-Up Research Grant 2016-18
- ✚ Innovation project entitled “Translating “Lilavati of Bhaskara” in the realm of present mathematics curriculum”, 2015-16. Funding Agency: University of Delhi
- ✚ Research & Development Grant 2015-16. Funding Agency: University of Delhi
- ✚ Innovation project entitled “Mathematical modeling and simulation of neural network based controllers for robots”, Nov. 2013-March 2015. Funding Agency: University of Delhi

Awards and Distinctions

- ✚ GATE (2008) AIR-147
- ✚ CSIR-JRF (2008)
- ✚ Travel Award by DST for visiting Technical University Malacca Malaysia, 2011.

Association With Professional Bodies

- ✚ Member of International Association of Computer Science and Information Technology (IACSIT)
- ✚ Member of International Association of Engineers (IAENG)
- ✚ Member of MIR Labs

Other Activities

Reviewer of Journals/Conferences

- ✚ Mathematical Reviews/MathSciNet (American Mathematical Society)
- ✚ International Journal of Intelligent and Robotic Systems (Springer)
- ✚ IEEE Transactions on Systems, Man and Cybernetics: Systems
- ✚ Advances in Mechanical Engineering (Sage)
- ✚ IEEE Conferences

Seminars and Workshops

- ✚ Participated in Refresher Course held at CPDHE University of Delhi from 31st May 2017 to 14th June 2019 (Grade-A).

- ✦ Participated in Orientation Programme held at CPDHE University of Delhi from 31st May 2017 to 28th June 2017 (Grade-A).
- ✦ Participated in workshop on “Building Mathematical Ability” held at University of Delhi, during June 24-26, 2013.
- ✦ Participated in “International Conference on Soft Computing for Problem Solving” held at I.I.T. Roorkee during December 20-22, 2011.
- ✦ Tutorial participant in “Hybrid Intelligent Systems (IEEE HIS-2011)”, Malaysia during 5-8 December, 2011.
- ✦ Participated and presented a paper in “International Congress of Mathematicians (ICM-2010)” held at Hyderabad during 19-27 August, 2010.
- ✦ Participated in “Study Group Meeting on Industrial Problems” held at the Department of Mathematics, I.I.T. Roorkee during March 16-21, 2009.

Software Packages

- ✦ Matlab
- ✦ Mathematica
- ✦ Latex



Signature of Faculty Member
Date: 30/07/2019