Faculty Profile

Name   Dr. Archana Ghotkar

Designation   Associate Professor

Department   IT

Email   aaghotkar@pict.edu

Phone   +91-24371101

Educational Qualifications

Degree	University/Institution	Year of Passing
Ph.D. (Computer Engg)	SPPU, Pune	2016
M.E. (Computer Engg)	COEP,Pune	2000
B.E. (Computer Sc & Engg)	Dr. BAMU, Aurangabad	1998

Professional Experience

Sr. No.	Designation & Institute	Duration
1	Associate Professor, PICT Pune	21/7/2011 to till date.
2	Assistant Professor, PICT Pune	1/12/2005 to 21/7/2011
3	Assistant Professor, PICT Pune	Jan 2006 to June 2006 work done as a Assistant Professor in Computer Engineering Department: 6 Months
4	Lecture, MES Wadia Engineering College, Pune	2/1/2000 to 30/11/2005

Research Publications

Sr. No.	Title	Publication/Conference
1	Mental Stress Detection with the Multimodal Data Using Ensemble Optimization Enabled Explainable Convolutional Neural Network. *Biomedical Materials & Devices* (2025). https://doi.org/10.1007/s44174-025-00296-3 IF: *3.9 (SCOPUS: Q2 Journal)*	Springer Journal
2	Vision-based Multimodal Sign Language Translation", SN Computer Science, A Springer Nature Journal, 21 September 2023, 4:715, 714-731.(Scopus-Q2 Journal)https://doi.org/10.1007/s42979-023-02273-3	Springer Nature
3	Aikyam: A Video Conferencing Utility for Deaf and Dumb", IEEE INTERNATIONAL CONFERENCE ON SMART COMPUTING AND COMMUNICATIONS, Muthoot organization, ICSCC ,Kochi, Kerala, arXiv preprint arXiv ..., 2023, 17 August, 2023, https://arxiv.org/ftp/arxiv/papers/2312/2312.05962.pdf, 979-8-3503-1409-0/23/$31.00 ©2023 IEEE	IEEE Conference
4	Study and Survey on Gesture Recognition Systems, IEEE International Conference on Computing, Communication, Control and Automation, 18 August 2023, PCCOE, Pune, arXiv:2312.00392 https://arxiv.org/abs/2312.00392	IEEE Conference
5	Enhancing Code-Mixing in Named Entity Recognition: A Comprehensive Survey of Deep Learning Models," 2024 Second International Conference on Emerging Trends in Information Technology and Engineering (ICETITE), Vellore, India, 2024, pp. 1-6, doi: 10.1109/ic-ETITE58242.2024.10493709	IEEE Conference
6	Competitive Sentiment Analysis for Brand Reputation Monitoring," 2024 Second International Conference on Emerging Trends in Information Technology and Engineering (ICETITE), Vellore, India, 2024, pp. 1-7, doi: 10.1109/ic-ETITE58242.2024.10493574.	IEEE Conference
7	Emotion Detection Using Machine Learning Algorithms: A Multiclass Sentiment Analysis Approach. International conference on Cybernetics, cognition, and Machine Learning Approach, Springer, 21-22-Aug-21 In: Gunjan, V.K., Kumar, A., Zurada, J.M., Singh, S.N. (eds) Computational Intelligence in Machine Learning. ICCIML 2022. Lecture Notes in Electrical Engineering, vol 1106. Springer, Singapore. https://doi.org/10.1007/978-981-99-7954-7_45	Springer conference
8	Discovering the Location by Intelligent Chatbot Support	IEEE Conference

	using geofence", IEEE,6th International Conference on Computing Communication Control and Automation (ICCUBEA), 26-27 Aug. 2022.	
9	A study of discovering the location by Intelligent Chatbot Support using geofence", IEEE,6th International Conference on Computing Communication Control and Automation (ICCUBEA), 26-27 Aug. 2022.	IEEE Conference
10	Real-time Left- and Right-Hand Detection for Sign Language Recognition. In Proceedings of International Conference on Computational Intelligence, Data Science and Cloud Computing. Springer, Singapore, Dec-21.	Springer Conference
11	Recommendation and Prediction of Solar energy consumption for smart homes using machine learning algorithms", IEEE, International conference on Artificial Intelligence and Machine vision, 2021, Date of Conference: 24-26 September 2021 Date Added to IEEE Xplore: 10 January 2022 INSPEC Accession Number: 21570613 **DOI:** 10.1109/AIMV53313.2021.9670909	IEEE Conference
12	Emotion Detection Using Machine Learning Algorithms, International conference on Emerging trends and Innovations in ICT, Springer,2022, Springer 2022.	Springer Conference
13	Suggesting Relevant Questions for a Query Using Statistical Natural Language Processing Technique", International conference on Emerging trends and Innovations in ICT, Springer,2022[arXiv:2204.12069, https://doi.org/10.48550/arXiv.2204.12069]	Springer Conference
14	Sign Language Recognition-A Survey of Techniques", 'International Journal of Recent Technology and Engineering (IJRTE)', ISSN: 2277- 3878 (Online), Volume-9 Issue-2, July 2020. Page No.:854-857.	International Journal
15	Sign Language Generation - A survey of techniques", International Journal of Innovative Technology and Exploring Engineering (IJITEE) Volume 9 - Issue 9, page 473-476. ISSN: 2278- 3075 (Online) July 2020 Edition	International Journal
16	An Indian Sign Language to American Sign Language Translator", International Journal of Current Engineering and Technology E-ISSN 2277 – 4106, P-ISSN 2347 – 5161 ©2021 INPRESSCO,FEB-21	International Journal
17	An English text to Indian Sign Language Convertor", International Journal of Current Engineering and Technology E-ISSN 2277 – 4106, P-ISSN 2347 – 5161, Feb-21.	International Journal
18	A Survey on Resource Management Algorithms in Cloud Computing", in IJRECE, VOL. 7 ISSUE 2 (APRIL- JUNE 2019)	International Journal

19	A Reliable Workload Management based on Predictive Analysis and Characterization of Workload Resources in HPC", 1st International Conference on Communication and Information Processing (ICCIP), by Springer,17th - 18th May, 2019	Springer conference
20	Analysis of Various Features of Hand Gestures using Leap Motion Controller for Indian Sign Language Interpretation" International Journal of Engineering Trends and Technology, Vol.61. 2231-5381. 10.14445/22315381/IJETT-V61P203, July-2018.	International Journal
21	A Survey on Object Detection Methodologies", International Journal of Advanced Research in Computer and Communication Engineering ,7(6), pp.101-104, July 2018	International Journal
22	Advertisement and Document Recommendation based on Content in the Image", International Journal of Computer Applications 182(20):12-16, October 2018.	International Journal
23	Context-based Multi-document summarization (Published in Contemporary Advances in Innovative and Applicable Information Technology Proceedings of ICCAIAIT 2018 by Springer), 2018. (https://www.springer.com/us/book/9789811315398)	Springer Conference
24	Human Face Detection İn Crowd And Density Analysis Using Neural Network Approach", International Conference on Intelligent Data Communication Technologies and Internet of Things (ICICI 2018), Tamilnadu, August-2018.(Published in Springer Lecture Notes on Data Engineering and Communications Technologies)	Springer Conference
25	A Study on Crowd Detection and Density Analysis for Safety Control. International Journal of Computer Sciences and Engineering", Vol. 6. 424-428. 10.26438/ijcse/v6i4.424428, April-2018	International Journal
26	A Survey on Vision Based Approaches for Image Description", IJARCCE. 6. 188-192. 10.17148/IJARCCE.2017.6435., 2017	International Journal
27	Image Description Using Deep Neural Network", International Journal of Scientific Research in Science and Technology, (3) 7: 508-513, Oct-2017	International Journal
28	Vision based Hand Gesture Recognition using Fourier Descriptor for Indian Sign Language", Signal and Image Processing: An International Journal, AIRCC Publishing Corporation, Vol. 7(5), pp.28-39, Dec-2016.	International Journal

29	Dynamic Hand Gesture Recognition using Hidden Markov Model by Microsoft Kinect Sensor", International journal of Computer Application, Vol. 150(5), PP. 5-9, Sept. 2016.10.5120/ijca2016911498.	International Journal
30	A Study of Different Approaches to Aspect-based Opinion Mining" International Journal of Computer Application,145(6), pp. 11-15, July 2016.	International Journal
31	Study on Hand Gesture Recognition using Depth Sensors, *International Journal of Computer Engineering and Applications, Volume X, Issue V, pp. 37-48, May 16.*	International Journal
32	Survey on Vision Based Approaches for Image Description", International Journal Of Advanced Research In Computer And Communication Engineering, Vol. 6(4), pp. 188-192, April 2017DOI 10.17148/IJARCCE.2017.6435.	International Journal
33	Survey on High Performance Java Script Dependency Analyzer", International Journal of Innovative Research and Communication Engineering, Vol. 5(1), pp.660-663, Jan-2017. ISSN(Online): 2320-9801 ISSN (Print): 2320-9798. DOI: 10.15680/IJIRCCE.2017. 050114	International Journal
34	Hand Gesture Recognition Using Leap Motion Controller", International Journal of Science and Research (IJSR), Volume 5 Issue 10, October 2016, 436 – 441.	International Journal
35	Scene Text Extraction using Stroke Width Transform for Tourist Translator on Android Platform", IEEE International Conference on Automatic Control & Dynamic Optimization Techniques (ICACDOT2016),I2IT, 9-10 September 2016.. **DOI:** 10.1109/ICACDOT.2016.7877598	IEEE Conference
36	Android Based Application for Analysis of Post-Harvest Losses and its Preventive Measures Using Machine Learning",IEEE International Conference on Automatic Control & Dynamic Optimization Techniques (ICACDOT2016),I2IT, 9-10 September 2016.	IEEE Conference
37	vision based Multi-Feature Hand Gesture Recognition for Indian Sign Language Manual Signs", *International journal on smart sensing and intelligent systems,*Vol.9(1), pp.124-147, March 2016. DOI: https://doi.org/10.21307/ijssis-2017-863 (SCOPUS, Web of Science)	International Journal
38	Dynamic Hand Gesture Recognition and Novel Sentence Interpretation Algorithm for Indian sign language Using Microsoft Kinect Sensor", Journal of Pattern Recognition Research, Volume 10, No.1, August 2015, pp. 24-	International Journal

	38.doi:10.13176/11.626, ISSN: ISSN 1558-884X	
40	Index Selection For In-Memory Databases", International Journal of Advanced Trends in Computer Science and Engineering, Vo. 3, No.10, pp.1-5, 2015.	International Journal
41	Recognition of spoken English phrases using visual features extraction and classification ",International Journal of Computer Science and Information Technologies (IJCSIT), Vol. 6, No.4,pp.3716-3719, 2015.(ISSN: 0975-9646)	International Journal
42	A Survey on Text Localization Method in Natural Scene Image", International Journal of Computer Applications, Vol.112, No.13, 2015.	International Journal
43	Animation of 3D human model using markerless motion capture applied to sports", International Journal of Computer Graphics & Animation , arXiv preprint arXiv:1402.2363, 2014.	International Journal
44	Performance Analysis Of Chain Code Descriptor For Hand Shape Classification", International Journal of Computer Graphics & Animation , Vol.4,No.2, 2014DOI-**10.5121/ijcga.2014.4202**	International Journal
45	Vision based Real time Hand Gesture Recognition Techniques for HCI," *International Journal of computer Application*, Volume. 70, No. 16, Foundation of Computer Science, New York, USA, 2013, pp.1-6. (Impact Factor: 0.835, published by Foundation of Computer Science, FCS, New York, USA, ISSN: 0975-8887	International Journal
46	Study of Vision based Hand Gesture Recognition Using Indian Sign Language," *International Journal on Smart Sensing and Intelligent System*, Volume. 7, No.1, March 2014. pp. 96-115. ISSN: 1178-5608 (SCOPUS, Web of Science)	International Journal
47	Recognition of spoken English phrases using visual features extraction and classification", Proceeding of Third Post Graduate Conference on Computer engineering, cPGCON, Elsevier, 2014.	International Conference Elsevier Publisher
48	Hand Segmentation Techniques to Hand Gesture Recognition for Natural Human Computer Interaction," International Journal of Human Computer Interaction (IJHCI), Computer Science Journal, Malaysia, Volume (3) : issue(1), April 2012, pp.15-25.ISSN 2180-1347.	International Journal

49	Hand Gesture recognition for Indian Sign Language," *IEEE International conference on Computer Communication and Informatics*, IEEE xplore, Coimbatore (India), Jan-12. ISBN: 978-1-4577-1580-8.	International Journal
50	An approach to Second Generation Tag Cloud For Assessment of Business Search", IEEE International conference on Technology enhanced Education(ICTEE),IEEE xplore,Amritapuri(India), Jan-2012.ISBN: 978-1-4577-0725-4 Digital Object Identifier: 10.1109/ICTEE.2012.6208610	IEEE Conference
51	A Novel approach for Image segmentation in Real Time Hand Gesture Recognition for HCI," International Conference (ICSCI-2011), Pentagram Research, Hyderabad, Jan-2011. (Received best paper Award)	IEEE Conference
52	Human computer Interaction using real time hand gesture recognition," *AICTE sponsored National conference (NCETT-2010),VNS Technology,* Bhopal, March-2010. ISBN-978-81-89107-92-5, PP. 21-24.	National Conference
53	HCIRTHGR: HCI using Real Time Hand Gesture Recognition For PC Application", National Conference (NCFCA-09),AISSMS,Pune.Dec-09.	National Conference
54	Optical Character Recognition for Devnagari Script", NCAETE-2005, Osmanabad, Feb-2005.(received best paper Award)	National Conference

Research Project

Title: "Real time vision based hand gesture recognition for HCI"

Sponsor Agency: Department of Science and Technology, New Delhi.

Amount: Rs. 4,80,000/

Status: Completed (Duration 2009-2012)

Patents:

Sr. No.	Patent Title	Application no. With date	Published on date	Status
1	System and method to forecast solar energy production and recommend energy Allocation for electronic devices	202021023513 on 4/6/2020	3/7/2020	Published
2	A system for recommending a relevant query using a statistical method	202021023694 On 5/6/2020	3/7/2020	Patent Granted Patent No.: 369860
3	A system and method for enabling gesture based communication for differently abled individuals	202021025627 on 18/6/2020	17/7/2020	Patent Granted Patent No.: 382326
4	Video conferencing utility for Deaf and Dumb	202321051148	29/7/2023	Published
5	System and Method for Multi-Modal Assessment of Mental Stress using Machine Learning	202221037485	29/6/2022	Granted.(28/12/2023) Patent No. 491042

Books Published:

Sr. No.	Title	Publisher & Year
1	Information Retrieval and Natural Language Processing - A Graph Theory Approach,	Springer Nature, 2022

Conferences / Seminars Conducted

Sr. No.	Conference/Seminar	Year
1	Worked as a Coordinator for ISTE approved short term training National level workshop, on "Linux and Networking", PICT, Pune, Aug-2007	2007
2	Organized a seminar under R&D department on "What is Research" by Dr. Uday Khedkar, IIT, Mumbai at PICT, Pune. 2009.	2009
3	Worked as a coordinator for SPPU sponsored State level workshop on "Data Analytics with R-Programming" at PICT, Pune. Jan-2017	2017
4	Worked as a coordinator for SPPU sponsored State level workshop on "Statistics for Data Science" at PICT, Pune. Jan-2018	2018
5	Worked as a coordinator and convenor for 50 hours certificate course on "Data Science & Big Data Analytics Hands-on with Open-Source Tools", at IT Department during 27th Sept. to 24th Oct 2022.	2022
6	Worked as a convenor for 40 hours certificate course on "C++ Programming Language with Hands-On Experience", at IT Department during 29th August to 19th September 2022.	2022
7	Certificate Course on "Data Science"	2022-23 and 2023-24
8	AR-VR Workshop	2023-24
9	Drone Workshop with C-DAC	2023-24
10	AR-VR Workshop with C-DAC	2024-25

Awards & Recognitions

Sr. No.	Award/Recognition	Year
1	Best paper Award in national conference held in	2005

	Osmanabad -2005 for titled "Optical Character Recognition for Devnagari Script"	
2	Best paper Award in International conference (ICSCI-2011) by Pentagram research, Hyderabad.	2011

Areas of Interest

Sr. No.	Area
1	Computer Vision
2	Pattern Recognition
3	Data Analytics
4	Machine Learning