Curriculum Vitae

Dr. Jyoti Joglekar

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Current Designation: Professor, Department of Computer Engineering, K. J. Somaiya College of Engineering, Somaiya Vidyavihar University, Mumbai, India, 400077.

Dr. Jyoti Joglekar holds a Bachelor of Electrical engineering from Walchand College of Engineering Sangli (BE 1990), a Master of Computer Engineering from University of Mumbai (ME 2014). She possesses PhD from IIT Bombay in the area of 'Stereo Image Analysis of Satellite Images' (PhD 2015). She fetched DST-RFBR funding for Indo-Russian research project titled, 'Development of methods for in-season monitoring of sugarcane crop in Peninsular India using Earth Observations for precision water and nitrogen management', and further worked as Computer Vision and AI expert for this project. She worked on Chandrayaan 1 (India's Moon mission) data for some ISRO assignments, as a part of her doctoral research work. She worked as the Principal Investigator of the research project with NESAC, ISRO, Meghalaya where KJSCE, of SVU is a technology development Project. She has presented papers in reputed International Society of Photogrammetry and Remote Sensing International conferences in France and Germany. She is a reviewer for reputed International Journals such as IEEE Transaction TGRS, IET and IEEE Letters, IEEE Access etc. She has delivered guest lectures in Quality Improvement Program at IIT Bombay as well as other engineering institutes from Mumbai University. She has teaching experience for more than 31 years at UG, PG and PhD level courses. She also possesses few years of Industry experience in web technology. She has guided more than 50 undergraduate and post graduate students' projects of BTech and M Tech Computer Engineering. She has delivered guest lectures for MTech and PhD students at CSRE, IIT Bombay and at IIT Ropar. She mentored PhD students in the area of Computer Vision, Machine Learning and Data security. She has been invited as a program chair and session chair for many international conferences. She has been honored as a fellow member of IETE. She is a Life member of Indian Society of Remote Sensing (ISRS) and ISTE. She worked Board of Studies member for few eminent engineering institutions from Mumbai and Pune.

Total experience: 31 years [Teaching (28) + Industry (2.5)]

Subjects taught at UG and PG and PhD level: Computer Vision, Digital Image Processing, Data Science, Big Data Analytics, Data Communication, Internet of Things, Machine Learning, Neural network and fuzzy systems, Computer Simulation and Modeling, Digital Signal and Image processing, Network design and management, Cyber security, System security, Information security

Areas of Interest: Computer Vision, Digital Signal and Image Processing, Machine Learning, Data Science, Big Data Analytics, Neural Network and Fuzzy Systems, Internet of Things

Major Projects Guided (UG):
Image Matching with Cross Correlation techniques, Area based Image Matching – a composite techniques, Feature based Image matching using SIFT, Development of a Car pooling website, Simulation of Honey Pot- a security measure, Mobile Banking and Security, Detecting and Resolving Firewall policy anomalies, OTP Generation and system security, In house project on NBA Rubrics.

PhD Thesis Title:

'Studies on Stereo Image Correspondence using Probabilistic Neural Network based Feature Matching as Constraint Initializer for Dense Matching'

Grants and Research projects:

- Grants fetched from IIT Bombay for France and Germany conferences and registration charges. Extra pages charges grant from IIT Bombay for publishing IEEE Transaction on Geoscience and Remote Sensing, Sep 2014.
- Worked on Chandrayan-1 data as PhD research assignments
- The research proposal is written, submitted and presented by Dr Joglekar in the duration Nov 2018 to Feb 2019. The Title is, 'Design and development of a Physical Working Prototype to showcase an optimized algorithm and software for image acquisition and processing using Swarm of Autonomous UAVs (Drones)'. Focal person for the ongoing TDP research project with NESAC, ISRO for which research fund grant of Rs 1095000/- is received
- Played major role to write the research proposal in Dec 2017, titled, 'Development of methods for in-season monitoring of sugarcane crop in Peninsular India using Earth Observations for precision water and nitrogen management', for Indo-Russian fund grant and this proposal received DST-RFBR fund grant in July 2018, Somaiya group received fund grant of Rs 24 Lacs from DST and the Russian partner received same amount grant from RFBR. Further played a role of expert adviser for this project

List of Publications:

International Journal publications

[1] Jyoti Joglekar, Shirish S. Gedam, B. Krishna Mohan, "Image Matching using SIFT Features and Relaxation Labeling Technique – A Constraint Initializing Method for Dense Stereo Matching", IEEE Transaction, Transaction on Geoscience and Remote Sensing, Vol. 52, Issue 12, 20 Jan. 2014, DOI: 10.1109/TGRS.2013.2291685, **SCIE indexed**

[2] M. Mahato, S. Gedam, J. Joglekar and K. M. Buddhiraju, "Dense Stereo Matching Based on Multiobjective Fitness Function—A Genetic Algorithm Optimization Approach for Stereo Correspondence," in IEEE Transactions on Geoscience and Remote Sensing, vol. 57, no. 6, pp. 3341-3353, June 2019

[3] Jyoti Joglekar, Shirish S. Gedam, Jan 2012, Area Based Image Matching Methods- A Survey, International Journal in Emerging Trends and Advanced Engineering, Vol. 2 Issue 1

[4] Krupa Popat, Jyoti Joglekar, November 2014, Novel Composite Approach to Reduce Broadcast Storm Problem, International Journal on Recent and Innovation Trends in Computing and Communication, Vol. 2, Issue 11, ISSN: 2321-8169.

[5] Dushyant Bhat, Jyoti Joglekar, Mobile Devices Forensics & Data Security – A Review, International Journal for Scientific Research & Development, Vol. 4, Issue 08, 2016, ISSN 2321-0613.

[6] Radha Adinarayanan and Jyoti Joglekar, 'Online Banking Security Issues - A Review', International Journal Of Innovation in Engineering Research and Management, ISSN: 2348- 4918, Vol. 03, Issue 05, October 2016.

[7] Shilpa Kalantri ,Jyoti Joglekar , 2016, " Comparison Of Algorithms For Detecting Firewall Policy Anomalies " , International Journal of Advance Computational Engineering and Networking (IJACEN) , pp. 18-22, Volume-4,Issue-1,

[8] Vidyullata Devmane, B. K. Lande, Jyoti Joglekar, Hemant Kothari, 'Achieving Authentication of Remotely Stored Data', International Journal of Innovative Technology and Exploring Engineering (IJITEE)', ISSN: 2278–3075 (Online), Volume-9 Issue-3, January 2020, Page No. 882-884, https://www.ijitee.org/download/volume-9-issue-3/

[9] Preserving data security in cloud environment using an adaptive homomorphic blockchain technique, V Devmane, BK. Lande, J Joglekar, D Hiran - Arabian Journal for Science and Engineering, 2022.

Patents and IPRs

[1] Indian Patent granted to Patentee on 24th March 2023, titled, 'A method and a processing system for fundamental matrix generation to estimate efficiently epipolar geometry', Patent number: 426697, Ref ID/application number: 202121009040, application date: 03 April 2021 patent warded date 24 March 2023

[2] Filed copyright (IPR) by Vidyullata Devmane, B. K. Lande, Jyoti Joglekar, Hemant Kothari, for title, 'Design and Development of A Novel Protocol for Remotely Stored Data Security Using Bilinear Pairing of Elliptic Curve points (BPECC)', Reg No.: L98799/2021, application date: 20 Jan 2021

[3] Filed Indian Patent titled, 'System and method to generate optimized flight path for UAV', Ref ID/application number: 202221034673, application date: 17 June 2022

International Conference Publications

[1] Jyoti Joglekar, Shirish S. Gedam, 2010, Image matching with SIFT Features – A Probabilistic approach, ISPRS WG III/2 International Conference, Paris, France. *Indexed in Citation Index (CPCI) of the Web of Science, SCOPUS, the E/I Compendex, and the Directory of Open Access Journals (DOAJ).*

[2] Jyoti Joglekar, Shirish S. Gedam, 2011, Area Based Stereo Image matching technique using Hausdorff distance and texture analysis, ISPRS WG III/4 International conference, Munich, Germany.
The Archives are listed in the ISI Conference Proceedings Citation Index (CPCI) of the Web of Science, SCOPUS, the E/I Compendex, and the Directory of Open Access Journals (DOAJ).

[3] Jyoti Joglekar, Shirish S. Gedam, 2011, Area based Image Matching Method – A Survey, International Conference on Recent Trends in Information Technology and Computer Science, India.

[4] Jyoti Joglekar, Shirish S. Gedam, 2012, Optical flow measurement by correlation methods for sensing scene. Structure, Geomatrix' 12, International Conference, IIT Bombay, Mumbai.

[5] Raghavendra H. Bhalerao and Shirish S. Gedam and Jyoti Joglekar, 2012 "Fast method for disparity map generation using Surface Geometry" in Remote Sensing and Photogrammetry Society's Annual Conference, London.

[6] R. H. Bhalerao, Shirish S. Gedam, Jyoti Joglekar, A. Almansa, 2013, Lunar Impact Crater Modeling using Trinocular Stereoscopic depth Impainting, IEEE International Conference on Image Information, India.

[7] R. H. Bhalerao, S. S. Gedam, Jyoti Joglekar, 2014, Scanline Optimization For Tri-Stereo Planetary Images, ISPRS, International Conference, International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences, Volume XL-3, 2014 ISPRS Technical Commission III Symposium, 5 – 7 September 2014, Zurich, Switzerland, *The Archives are listed in the ISI Conference Proceedings Citation Index (CPCI) of the Web of Science, SCOPUS, the E/I Compendex, and the Directory of Open Access Journals (DOAJ).*

[8] Krupa Popat, Jyoti Joglekar, 2014, Composite Approach to Reduce Broadcast Storm Problem, International Conference on Engineering Confluence, Equinox, 2014, Terna Engineering College, Nerul, Navi Mumbai.

[9] M. H. Khan, Jyoti Joglekar, 2014, A review paper on Cryptographic Hash Functions, International conference on recent trends in computer and electronics engineering, Mumbai.

[10] Shilpa Kalantri, Jyoti Joglekar, 2014, System and Information Security by Firewalls – A Survey, International Conference on Engineering Confluence, Multicon, Mumbai

[11] Vidyullata Devmane, B. K. Lande, Jyoti Joglekar, 2016, Remote Data Integrity Achieving Schemes in Cloud Storage: A Survey, International Conference on Data Engineering and Communication Technology, Lavasa, Pune.

[12] Manimala Mmahato, Shirish Gedam, Jyoti Joglekar, B. Krishna Mohan, 'Genetic algorithm based stereo image correspondence using multi-objective fitness function for remotely sensed images, International ASPRS conference, Picora 20, held in November 2017 at USA.

[13] Manimala Mmahato, Shirish Gedam, Jyoti Joglekar, 'A Variational Model with Adaptive Regularization Based Dense Stereo Matching for Remotely Sensed Stereo Images', International conference, ASRS, at Delhi, India, held in October 2017.

[14] Jyoti Joglekar, Simran Bhutani, Nisha Patel, Pradnya Soman, 'Lightweight Elliptical Curve Cryptography (ECC) for Data Integrity and User Authentication in Smart Transportation IoT system', International conference ICSCN held at, Chennai, India, July 2019

[15] Jignasha Sosa, Jyoti Joglekar, 'Smart Home Automation using Fuzzy Logic and Internet of Things Technologies', 4th International Conference on Inventive Computation Technologies [ICICT 2019] held at Coimbatore, India, Aug 2019

[16] Knowledge Base Creation for Prediction and Detection of Forest Fire, B Zodge, J Joglekar, Networks and Application: Proceedings of ICSCN, 2021

[17] Preprocessing of CT Imagery for Detection of Infection of Covid and Tuberculosis, Jyoti Saxena, Jyoti Joglekar, 20 Feb 2022, Science Plus International conference, New Delhi.

[18] H. B. Shah, J Joglekar, 'Content Based Document Image Retrieval using Computer Vision and AI Techniques', April 2023

National Conference Publications

[1]   Jyoti Joglekar, A. Athawale, H. B. Kekre, 2004, Information Hiding Techniques Using Steganography, national Conference on Image Processing, TSEC, Bandra, Mumbai.

[2]   Jyoti Joglekar, Shirish S. Gedam, 2011, Composite Stereo Image Matching Technique With Edge Extraction and Texture Analysis, Geomatrix' 11, National Conference, CSRE, IIT Bombay, Mumbai.

[3]   Jyoti Joglekar, Atharva Gole, Sahil Mankad, Ashish Chavan, 2019, 'Multispectral Satellite Image Classification by Optimization of Intensity Range – A Decision Tree Algorithm Based Approach', 4th ISSE conference INAC-4 held at SAC, ISRO Ahmedabad, India, 26-27 September 2019.

Book and book chapters:
Book:
[1]   Book titled 'Internet of Things' published by Oxford University Press, published in April 2021, Dr Durbha and Dr Joglekar

[2]   Book Chapter, J. Sosa, J. Joglekar., 'Smart Home Automation using Fuzzy Logic and Internet of Things Technologies' in Lecture Notes in Network and Systems, vol. 57. Prof. Dr. Janusz Kacprzyk, Ed. Coimbatore: Proceedings by Springer, 2019, pp.

[3]   Book Chapter: Joglekar, J., Bhutani, S., Patel, N., Soman, P. (2020). Lightweight Elliptical Curve Cryptography (ECC) for Data Integrity and User Authentication in Smart Transportation IoT System. In: Karrupusamy, P., Chen, J., Shi, Y. (eds) Sustainable Communication Networks and Application. ICSCN 2019. Lecture Notes on Data Engineering and Communications Technologies, vol 39. Springer, Cham. https://doi.org/10.1007/978-3-030-34515-0_28https://doi.org/10.1007/978-3-030-34515-0, Springer Nature Switzerland AG 2020

[4]   Book Chapter: Zodge, B., Joglekar, J., 'Knowledge Base Creation for Prediction and Detection of Forest Fire', Lecture Notes on Data Engineering and Communications Technologies book series (LNDECT, volume 93), DOI: https://doi.org/10.1007/978-981-16-6605-6_9, Published on 17 January 2022, by Publisher Springer, Singapore, Print ISBN978-981-16-6604-9, Online ISBN978-981-16-6605-6

Other Activities:

1. Internal Complaint Committee, SVU, Presiding officer from 5 June 2021.
2. Subject expert on UGC interview panel of TSET in July 2023 for AIDS
3. Board of Studies (BoS) at S K Somaiya Science college at SVU
4. Board of Studies member at the Department of Computer Engineering, Mukesh Patel school of Technology, NMIMS, Mumbai
5. Board of Studies member at the Department of Information Technology, Cummins College of Engineering, Pune.
6. Conferred Distinguished Fellowship by IIT alumni Council in Dec 2020
7. Currently acting as KJSCE, SVU institute coordinator for the IIRS-ISRO Outreach Programme for Distance Learning
8. An active member of the SIH Innovative Product Drive Ecosystem and has mentored three of the students' winning teams in Smart India Hackathon (SIH) in 2018 and 2019
9. Invited as session chair for the International Conference ICCUBA at Pimpri Chinchwad Engineering college Pune in Feb 2018
10. Invited as session chair for the International Conference on Engineering Confluence (ICEC), September, 2015 at Terna Engineering College, Nerul, Navi Mumbai.
11. Presented paper in International conference Geomatrix'12 at IIT Bombay in 2012.
12. Presented research papers in reputed, indexed ISPRS International conferences at France in 2010 and at Germany in 2011.
13. Second prize winner for her poster paper presentation at INAC-4 conference by ISSE and ISRO held at SAC, ISRO, Ahmedabad in September 2019
14. Research volunteer with IIT alumni Council since April 2020 and is working on pressing research problems in several cutting-edge technologies in the area of X-Ray, Ultrasound, EEG.
15. Fellow member of IETE
16. Life member of Indian Society of Remote Sensing (ISRS)
17. Life member of ISTE.
18. Reviewer of international and national research journals of repute such as IEEE Transaction TGRS and, IEEE letters, Springer, IET, ISRS
19. Reviewer of research papers for many International and National Conferences.
20. Expert Guest Lectures delivered in QIPs at CSRE, IIT Bombay in the years 2011, 2012, 2013, 2014.
21. Expert talk at Online QIP by FRCRCE, Bandra on 'Introduction to Deep Learning' in May 2020
22. Expert talk at STTPs in LTCOE, Navi Mumbai and DBIT Kurla in 2018

23. Expert Talk delivered at IIT Ropar in a workshop, titled, 'Computer Vision and AI Techniques for Agricultural Applications', in July 2021
24. Organized and conducted One Day Workshop on 'Self Assessment Report Criteria' on 7th March 2015 at SAKEC for promoting NBA activities.
25. Invited as Session Chair for the International Conference ICAC3'2015, FRCRCE, 1st April 2015, Bandra, Mumbai.
26. Coordinator for organizing orientation program on behalf of Mumbai University for the subject 'Machine Learning' in Jan 2016.
27. Organized convener meeting on behalf of Mumbai University for finalizing ME Computer Engineering Syllabus, July 2016.
28. Research proposal expert for reviewing research proposal at NMIMS MPSTM, Vile Parle, July 2016.
29. Examiner for APS at research centre RGIT, Varsova, Mumbai 2015, Feb and August 2016.
30. Organized ISTE approved STTP of one week on 'Internet of Things and Its Applications', at SAKEC, Chembur, in December 2016
31. Acted as Convener of Mumbai University syllabus setting committee ME computer for the subject 'Internet of Things', Syllabus Revision 2016.
32. Acted as a member of Mumbai University syllabus setting committee ME Computer Engineering for the subject 'Image Analysis and Interpretation'.
33. Convener for Syllabus Revision 2016, for University of Mumbai for BE Computer Engineering Subjects DSIP and Computer Vision.
34. Worked as NBA Coordinator for SAKEC
35. Worked as a Staff Coordinator CSI-SAKEC
36. Organized: various CSI-SAKEC Programs
37. Delivered a expert guest lecture on 'Cryptography and Cryptanalysis', at Vivekanand Polytechnic, Chembur, 18th Dec 2014