

# Milind Padalkar

## Curriculum Vitae

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## Education

- 2011–2017 **Ph.D. in Information and Communication Technology**,  
*Dhirubhai Ambani Institute of Information and Communication Technology (DA-IICT)*, Gandhinagar, India,  
CPI 9.00/10.  
Thesis title: *Novel Techniques for Auto-inpainting in Heritage Reconstruction*  
Supervisor: Dr. Manjunath V. Joshi
- 2008–2010 **M.Tech. in Computer Engineering**,  
*Sardar Vallabhbhai National Institute of Technology (SVNIT)*, Surat, India,  
CGPA 8.75/10.  
Thesis title: *Histogram Based Efficient Video Shot Detection Algorithms*  
Supervisor: Dr. Mukesh A. Zaveri
- 2004–2008 **B.E. in Information Technology**,  
*Finolex Academy of Management and Technology (FAMT)*, Ratnagiri,  
University of Mumbai, India,  
Aggregate Percentage 61.67%.  
Project title: *Content Based Image Retrieval System*  
Supervisor: Prof. Santosh V. Jadhav
- 2004 **Higher Secondary Certificate (H.S.C.)**,  
Maharashtra State Board, India,  
Percentage 80.50%.
- 2002 **Secondary School Certificate (S.S.C.)**,  
Maharashtra State Board, India,  
Percentage 85.86%.

## Publications

### Book

- [1] M. G. Padalkar, M. V. Joshi, and N. L. Khatri, *Digital Heritage Reconstruction Using Super-resolution and Inpainting*, B. A. Barsky, Ed. Synthesis Lectures on Visual Computing, Morgan & Claypool Publishers, 2016. [Online]. Available: [http://www.morganclaypoolpublishers.com/catalog\\_Orig/product\\_info.php?products\\_id=1008](http://www.morganclaypoolpublishers.com/catalog_Orig/product_info.php?products_id=1008).

### Book Chapter

- [1] M. G. Padalkar and M. V. Joshi, “Automatic detection and inpainting of defaced regions and cracks in heritage monuments,” in *Digital Hampi: Preserving Indian Cultural Heritage*, A. Mallik, S. Chaudhury, V. Chandru, and S. Srinivasan, Eds. Springer Singapore, 2017. [Online]. Available: [www.springer.com/gp/book/9789811057373](http://www.springer.com/gp/book/9789811057373).

## Journal

- [1] M. G. Padalkar and M. V. Joshi, “Auto-inpainting heritage scenes: A complete framework for detecting and infilling cracks in images and videos with quantitative assessment,” *Machine Vision and Applications*, vol. 26, no. 2-3, pp. 317–337, 2015. [Online]. Available: <http://dx.doi.org/10.1007/s00138-015-0661-6>.

## Conferences and Workshops

- [1] M. G. Padalkar, C. Beltrán-González, M. Bustreo, A. Del Bue, and V. Murino, “A versatile crack inspection portable system based on classifier ensemble and controlled illumination,” in *25th International Conference on Pattern Recognition (ICPR 2020)*, [Accepted], 2020.
- [2] M. G. Padalkar, M. V. Joshi, and N. Khatri, “Simultaneous inpainting and super-resolution using self-learning,” in *Proceedings of the 26th British Machine Vision Conference (BMVC2015)*, X. Xie, M. W. Jones, and G. K. L. Tam, Eds., BMVA Press, 2015, pp. 105.1–105.12. [Online]. Available: <https://dx.doi.org/10.5244/C.29.105>.
- [3] M. G. Padalkar, M. V. Vora, M. V. Joshi, M. A. Zaveri, and M. S. Raval, “Identifying Vandalized Regions in Facial Images of Statues for Inpainting,” in *ICIAP2013 Workshop on Multimedia for Cultural Heritage*, ser. Lecture Notes in Computer Science, vol. 8158, Springer Berlin Heidelberg, 2013, pp. 208–217. [Online]. Available: [http://dx.doi.org/10.1007/978-3-642-41190-8\\_23](http://dx.doi.org/10.1007/978-3-642-41190-8_23).
- [4] M. G. Padalkar, M. V. Joshi, M. A. Zaveri, and C. M. Parmar, “Exemplar based Inpainting using Autoregressive Parameter Estimation,” in *Proceedings of the International Conference on Signal, Image and Video Processing*, ser. ICSIVP’12, 2012, pp. 154–160, ISBN: 978-93-81583-19-7.
- [5] M. G. Padalkar, M. A. Zaveri, and M. V. Joshi, “SVD Based Automatic Detection of Target Regions for Image Inpainting,” in *Computer Vision - ACCV 2012 Workshops*, J.-I. Park and J. Kim, Eds., ser. Lecture Notes in Computer Science, vol. 7729, Springer Berlin Heidelberg, 2012, pp. 61–71. [Online]. Available: [http://dx.doi.org/10.1007/978-3-642-37484-5\\_6](http://dx.doi.org/10.1007/978-3-642-37484-5_6).
- [6] M. G. Padalkar and M. A. Zaveri, “Dissolve Detection Based Shot Identification Using Singular Value Decomposition,” in *Proceedings of the 2010 Fourth Asia International Conference on Mathematical/Analytical Modelling and Computer Simulation*, ser. AMS ’10, Washington, DC, USA: IEEE Computer Society, 2010, pp. 312–316. [Online]. Available: <http://dx.doi.org/10.1109/AMS.2010.69>.

## Experience

Jan. 2019 – **Postdoc**,

till date *Pattern Analysis and Computer Vision (PAVIS)*,  
*Istituto Italiano di Tecnologia (IIT), Genova, Italy*,  
Supervisors: Prof. Vittorio Murino (Jan. 2019 – Aug. 2019) and  
Dr. Alessio Del Bue (Aug. 2019 onwards),

Summary: Working on an automatic visual inspection system in collaboration with an industrial partner (Ansaldo Energia) to detect defects using different sensor modalities. In particular the defects like cracks and fissures are to be identified automatically in the tiles of combustion chambers. For this purpose, developed new techniques to automate tile area detection and crack identification by applying computer vision and deep learning based methods. Also involved in the development of a prototype that can be used to (a) acquire tile images under varying illumination conditions, (b) annotate ground truth, as well as (c) used for detection of the defects. An outcome of this work has been accepted in ICPR2020.

Mar. 2017 – **Senior Research Engineer**,  
 Dec. 2018 *Vehant Technologies, NOIDA, India*,  
 Summary: Developed a novel technique for license plate super-resolution using convolutional neural networks. Worked on vehicle color recognition. Guided design engineers and interns on various projects including traffic-light phase recognition, vehicle counting, optical character recognition, image registration, vehicle model recognition using underside images, vehicle logo recognition, helmet detection, and object recognition in X-ray images.

Apr. 2016 – **Teaching Assistant**,  
 Jul. 2016 *DA-IICT, Gandhinagar, India*.

Aug. 2011 – **Junior Research Fellow (JRF)**,  
 Mar. 2016 *DA-IICT, Gandhinagar, India*,  
 Project: “Immersive Navigation for a Walk-through Application”, a part of the *Indian Digital Heritage Project* funded by Department of Science and Technology (DST), Govt. of India.

Feb. 2011 – **Assistant Professor**,  
 Jul. 2011 *MCA Department*,  
*Sardar Patel Institute of Technology, Mumbai, India*.

Jan. 2011 – **Lecturer**,  
 Feb. 2011 *Department of Information Technology*,  
*Sardar Patel Institute of Technology, Mumbai, India*.

## Skills

Programming C/C++, Python, Matlab  
 Libraries OpenCV, Qt, PyTorch, Keras (with Tensorflow backend), CAFFE  
 Publishing /  $\text{\LaTeX}$ , MS Office, LibreOffice  
 Presentation  
 Operating Microsoft Windows, Linux  
 Systems

## International Exposure

Dec. 2017 Attended *the National Conference on Computer Vision, Pattern Recognition, Image Processing and Graphics (NCVPRIPG2017)* at Indian Institute of Technology Mandi, India.

Feb. 2016 Attended the ACM Distinguished Speaker talk titled “From Vision-Realistic Rendering to Vision Correcting Displays” by Prof. Brian A. Barsky (UC Berkeley) at Gandhinagar, India.

Jan. 2016 Presented two papers in *XRCI Open 2016* at Bengaluru, India. [Posters]

Sept. 2015 Presented paper in the *26<sup>th</sup> British Machine Vision Conference (BMVC2015)* at Swansea, United Kingdom. [Poster]

Jan. 2015 Participated in the *Immersive Storytelling track, MIT Media Lab Design Innovation Workshop 2015* at Gandhinagar, India.

- Dec. 2013 Attended the *National Conference on Computer Vision, Pattern Recognition, Image Processing and Graphics (NCVPRIPG2013)* at Indian Institute of Technology Jodhpur, India.
- Dec. 2012 Attended the *Eight Indian Conference on Vision, Graphics and Image Processing (ICVGIP2012)* at Indian Institute of Technology Bombay, India.
- Dec. 2012 Attended a *two day workshop on Digital Video Processing and Analytics (DVAP-12)* at Indian Institute of Technology Madras, India.
- Jan. 2012 Presented paper in the *International Conference on Signal, Image and Video Processing (ICSIVP2012)* at Indian Institute of Technology Patna, India. [Oral]
- May 2010 Presented paper in the *Fourth Asia International Conference on Mathematical/Analytical Modelling and Computer Simulation (AMS2010)* at Kota Kinabalu, Malaysia. [Oral]

## --- Awards and Honours

- Sep. 2018 – Served as a *Reviewer* in Multimedia Tools and Applications.
- Dec. 2018 (Invited by: Dr. Borko Furht, Editor-in-Chief, Multimedia Tools and Applications).
- Aug. 2018 Served as a *Reviewer* in Multimedia Tools and Applications.  
(Invited by: Guest Editor (SI: 1119 – Deep Learning for Computer-aided Medical Diagnosis), Multimedia Tools and Applications).
- Jan. 2018 Served as a *Reviewer* in IEEE Access.  
(Invited by: Dr. Mehul S. Raval, IEEE Access Associate Editor).
- Jul. 2017 Served as a *Reviewer* in Imaging Science Journal.  
(Invited by: Dr. Mark A Richardson, Chief Editor, Imaging Science Journal).
- Sept. 2015 Awarded the *Xerox Research Centre India Travel Grant (₹ 1,25,000)* to attend the 26<sup>th</sup> British Machine Vision Conference (BMVC2015) at Swansea, United Kingdom.
- Nov. 2014 Served as an *Organizing Committee Member* in the 3<sup>rd</sup> ACCV Workshop on *e-Heritage* which was held in conjunction with the 12<sup>th</sup> Asian Conference on Computer Vision (ACCV2014), Singapore.
- Sep. 2014 Served as a *Reviewer* in the Eighth International Conference on Advances in Pattern Recognition (ICAPR 2015), Kolkata.  
(Invited by: Program Chairs, ICAPR 2015).
- Jan. 2014 Served as a *Reviewer* in Multimedia Tools and Applications.  
(Invited by: The Editorial Office, Multimedia Tools and Applications).

## --- Competitive Exams

- 2007 **Graduate Aptitude Test in Engineering (GATE)**,  
*Discipline: Information Technology*,  
All India Rank: 46.

## --- Extra Curricular Activities

- 2007–2008 General Secretary of the institute (FAMT)
- 2007–2008 Chief Coordinator of the Information Technology Students Association (FAMT)
- 2005–2007 Coordinator for Athletics – Annual Sports (FAMT)

- 1999–2007 Participated and won in various games like Athletics, Chess and Football at College, Division, State and National level events
- 2001–2002 Awarded as the *National Athlete of the Year* by school (Vidya Vikasini English High School, Vasai (E))

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## Hobbies

- 🎵 Playing musical instruments like mouth-organ & guitar.
- 🌐📖📱 Surfing the Internet, especially various technical forums.
- 📝 Blog I also like to write articles in my blog: <http://milindpadalkar.wordpress.com>

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## References

- ▶ **Dr. Manjunath V. Joshi**  
*Professor*, DA-IICT, Gandhinagar, India  
✉ [mv\\_joshi@daiict.ac.in](mailto:mv_joshi@daiict.ac.in) ☎ +91-79-30510611
- ▶ **Dr. Suman K. Mitra**  
*Professor and Dean (Academic Programs)*, DA-IICT, Gandhinagar, India  
✉ [suman\\_mitra@daiict.ac.in](mailto:suman_mitra@daiict.ac.in) ☎ +91-79-30510584
- ▶ **Dr. Mukesh A. Zaveri**  
*Associate Professor*, SVNIT, Surat, India  
✉ [mazaveri@coed.svnit.ac.in](mailto:mazaveri@coed.svnit.ac.in) ☎ +91-261-2201766