

Faculty Profile (For booklet and website)

Name: Dr. Abhishek Gupta
Designation: Assistant Professor
Department: Computer Science & Engineering
Email ID: abhishek.gupta@smvdu.ac.in
abhishekgupta10@yahoo.co.in



Contact Number and Extn.: 01991-285524 Extn.: 2325

Qualification: PhD (AcSIR-Central Scientific Instruments Organisation, Chandigarh) in Engg
M.E. (PEC University of Technology, Chandigarh) in Computer Sci & Engg
B.E. (Rajasthan University) in Computer Engineering
GATE-2009 AIR: 996

Experience:

Teaching: 4 Years **Research:** 4 Years and 4 Months **Administration:** Nil **Total:** 8.5 Years

Areas of Interest / Specialization:

1. Medical Image Processing
2. Digital Image Processing
3. Computer Aided Diagnosis (CAD)

Brief Bio-data:

I have completed B.E. in Computer Engineering from Rajasthan University in 2009, M.E. in Computer Science and Engineering from PEC University of Technology, Chandigarh in 2011 and PhD in Engineering from AcSIR (Academy of Scientific and Innovative Research) at CSIR-Central Scientific Instruments Organisation, Chandigarh in 2016. I am working in the broad spectrum of Image Processing and Computer Vision. I have also worked on projects in the areas of medical/dental diagnosis and treatment planning. I have filed many Indian and US patents and received grant also. I have authored many SCI publications related to automation in computer aided diagnosis and assistance in treatment planning based on image processing techniques. Currently, I am interested to work in niche areas of medical/dental imaging for automation.

Research Profile

Research Projects Undertaken:

S. No.	Role	Title	Funding Agency	Current Status (Closed/ Running)
1.	Project Investigator	Automatic monitoring of plants based on leaf segmentation	UGC	Running

Research Publications (in non-paid journals):

S. No.	Year	Publication
1.	2015	Abhishek Gupta , Om Prakash Kharbanda, Viren Sardana, Rajiv Balachandran, and Harish Kumar Sardana, " A knowledge-based algorithm for automatic detection of cephalometric landmarks on CBCT images ," <i>International Journal of Computer Assisted Radiology and Surgery (Springer)</i> , vol. 10 (11), pp. 1737-1752, 2015 (SCI IF=2.15) http://link.springer.com/article/10.1007/s11548-015-1173-6
2.	2016	Abhishek Gupta , Om Prakash Kharbanda, Viren Sardana, Rajiv B, Harish Kumar Sardana, " Accuracy of 3D cephalometric measurements based on an automatic knowledge-based landmark detection algorithm ", <i>International Journal of Computer Assisted Radiology and Surgery (Springer)</i> , vol. 11 (7), pp. 1297-1309, 2016 (SCI IF=2.15) http://link.springer.com/article/10.1007/s11548-015-1334-7
3.	2017	Abhishek Gupta , Om Prakash Kharbanda, Rajiv B, Viren Sardana, Shilpa Kalra, Shushma Chaurasia, Harish Kumar Sardana, " Precision of manual landmark identification between as-received and oriented volume-rendered cone-beam computed tomography images " <i>American Journal of Orthodontics and Dentofacial Orthopedics</i> .151(1):118-31, 2017 (Elsevier, SCI IF=1.91) http://www.sciencedirect.com/science/article/pii/S088954061630573X
4.	2017	Bala Chakravarthy Neelapu, Om Prakash Kharbanda, Harish Kumar Sardana, Rajiv Balachandran, Viren Sardana, Priyanka Kapoor, Abhishek Gupta , Srikanth Vasamsetti, " Craniofacial and upper airway morphology in adult obstructive sleep apnea patients: a systematic review and meta-analysis of cephalometric studies " <i>Sleep Medicine Reviews</i> , 2017;31:79-90. (Elsevier, SCI IF =10.6) http://www.sciencedirect.com/science/article/pii/S1087079216000162
5.	2017	B C Neelapu, O P Kharbanda, Viren Sardana, Abhishek Gupta , Srikanth Vasamsetti, Rajiv Balachandran, Shailendra Singh Rana, Harish Kumar Sardana, " A pilot study for segmentation of pharyngeal and sino-nasal airway subregions by automatic contour initialization ". <i>International Journal of Computer Assisted Radiology and Surgery</i> , 2017, 12(11):1877-93, (Springer, SCI IF=2.15) https://link.springer.com/article/10.1007/s11548-017-1650-1

6.	2017	B C Neelapu, O P Kharbanda, H K Sardana, Abhishek Gupta , S Vasamsetti, S Rana, R Balachandran, V Sardana, “ The reliability of different methods of manual volumetric segmentation of pharyngeal and sinonasal subregions ” Oral Surgery, Oral Medicine, Oral Pathology, Oral Radiology, 2017, 124(6):577-87 (Elsevier) (SCI IF= 1.71) http://www.sciencedirect.com/science/article/pii/S2212440317310386
7.	2018	B C Neelapu, O P Kharbanda, Viren Sardana, Abhishek Gupta , Srikanth Vasamsetti, Rajiv Balachandran, Harish Kumar Sardana, “ Automatic localization of three-dimensional cephalometric landmarks on cone beam CT images by extracting symmetry features of the skull ”, <i>Dentomaxillofacial Radiology</i> , 2018; 47(2) (SCI IF=1.9) https://doi.org/10.1259/dmfr.20170054
8.	2019	Payal Maken, Abhishek Gupta* , Manoj Kumar Gupta, “ A Study on Various Techniques Involved in Gender Prediction System: A Comprehensive Review ”, <i>Cybernetics and Information Technologies</i> , 2019, 19(2):51-73, Scopus indexed and E-SCI Journal, https://doi.org/10.2478/cait-2019-0015
9.	2019	Abhishek Gupta , “ Current research opportunities of image processing and computer vision ”, <i>Journal of Computer Science</i> 20(4) 2019: 389–412 Scopus indexed and E-SCI Journal https://doi.org/10.7494/csci.2019.20.4.3163
10.	2020	Abhishek Gupta , “ Challenges for Computer Aided Diagnostics using X-Ray and Tomographic Reconstruction Images in craniofacial applications ”, <i>International Journal of Computational Vision and Robotics (IJCVR)</i> , 2020, 10 (4):360-371, Scopus indexed Journal
11.	2020	Shivalika Sharma and Abhishek Gupta “ A review for the automatic methods of plant’s leaf image segmentation ”, <i>Int. J. Intelligence and Sustainable Computing</i> , 2020, 1(1): pp.101–114. https://doi.org/10.1504/IJISC.2020.104828

Patents:

S. No.	Name	Status
1.	Title: Method for automatic detection of anatomical landmarks in volumetric data Inventors: Abhishek Gupta , Harish Kumar Sardana, Om Prakash Kharbanda, Viren Sardana Filing Application No (USPTO): 14/994044 Publication number: US 10,318,839 B2 Date of Grant: Jun 11, 2019 Available at https://patents.google.com/patent/US10318839B2	Granted

2.	<p>Title: Method and system for automatic volumetric segmentation of human upper respiratory tract</p> <p>Inventors: Bala Chakravarthy Neelapu, Harish Kumar Sardana, Om Prakash Kharbanda, Viren Sardana, Abhishek Gupta, Shrikanth Vasamsetti</p> <p>Application Filing No (USPTO): 16/118,088</p> <p>Date of Filing: Aug 30, 2018</p> <p>Available at https://www.google.com/patents/US20190066303</p> <p>* Notice of allowance has been issued. Formal grant will be issued after submission of due fee.</p>	Granted*
3.	<p>Title: Method for automatic detection of anatomical landmarks in volumetric data</p> <p>Inventors: Abhishek Gupta, Harish Kumar Sardana, Om Prakash Kharbanda, Viren Sardana</p> <p>Filing No (India): 94/DEL/2015</p> <p>Date: Jan 13, 2015</p>	Filed
4.	<p>Title: Method and system for automatic volumetric segmentation of human upper respiratory tract</p> <p>Inventors: Bala Chakravarthy Neelapu, Harish Kumar Sardana, Om Prakash Kharbanda, Viren Sardana, Abhishek Gupta, Shrikanth Vasamsetti</p> <p>Application Filing No (India): 201711030803</p> <p>Filing Date: Aug 31, 2017</p> <p>Publication Date: July 19, 2019</p>	Filed

Research Supervised:

S. No.	Year	Role	PG/PhD	Research Topic	Student's Name	Status
1.	2018	Supervisor	PG	Leaf segmentation in plant phenotyping	Mr. Vikas Gupta	Completed
2.	2019	Supervisor	PG	A method for automatic classification of gender based on handwriting	Ms. Payal Maken	Completed
3.	2019	Supervisor	PG	Image-based Automatic Segmentation using Clustering Algorithm	Ms. Shivalika Sharma	Completed
4.	2020	Supervisor	PG	Automatic retinal blood vessel segmentation	Ms. Sonali Verma	Ongoing
5.	2022	Supervisor	PhD	Automatic Segmentation of Organ-at-Risk in Thorosis Computed Tomography images	Ms. Malvika Ashok (18DSC005)	Ongoing

6.	2024	Supervisor	PhD	Coursework ongoing	Mr. Mohit Pandey	Ongoing
----	------	------------	-----	--------------------	---------------------	---------
