

National Institute of Technology, Tiruchirappalli: Performa for CV of Faculty/ Staff Members

Curriculum Vitae



Brief Profile:

I completed my Ph.D. from the Department of Electrical Engineering, Indian Institute of Technology Bombay in 2018. Title of my Ph.D. thesis is "Robust and Efficient Unsupervised Image Co-segmentation". It was jointly supervised by Prof. Subhasis Chaudhuri and Prof. Rajbabu Velmurugan. Prior to this, I received my B.Tech. degree from the Department of Electronics and Communication Engineering, Kalyani Government Engineering College in 2010 and M.Tech. degree from the Department of Electronics and Electrical Engineering, Indian Institute of Technology Guwahati in 2012.

I was a postdoctoral researcher at Istituto Italiano di Tecnologia, Genova (Research Lab: Pattern Analysis and Computer Vision). I was an Assistant Professor at Dhirubhai Ambani Institute of Information and Communication Technology (DA-IICT), Gandhinagar. At present, I am an Assistant Professor at National Institute of Technology (NIT) Tiruchirappalli. My research interests include Image Processing, Computer Vision and Machine Learning: image co-segmentation, subgraph matching, image saliency, scene analysis, robust computer vision, adversarial machine learning.

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| 1. Name: | Dr. Avik Hati |
| 2. Designation: | Assistant Professor |
| 3. Office Address: | Department of ECE, NIT-T |
| 4. Telephone (Direct) (Optional): | |
| Telephone : | Extn (Optional): |
| Mobile (Optional): | |
| 5. Email (Primary): avikhati@nitt.edu | Email (Secondary) : |
| 6. Field(s) of Specialization: | Image Processing, Computer Vision,
Machine Learning |

National Institute of Technology, Tiruchirappalli: Performa for CV of Faculty/ Staff Members

7. Employment Profile

Job Title	Employer	From	To
Assistant Professor	National Institute of Technology, Tiruchirappalli	18.10.2022	Present
Assistant Professor	Dhirubhai Ambani Institute of Information and Communication Technology (DA-IICT), Gandhinagar	15.09.2020	14.10.2022
Postdoctoral Researcher	Istituto Italiano di Tecnologia Genova, Italy (PAVIS department)	01.03.2019	29.02.2020
Project Research Scientist	National Center for Excellence in Technologies for Internal Security (NCETIS), IIT Bombay	02.08.2018	23.01.2019

8. Academic Qualifications (From Highest Degree to High School):

Examination	Board / University	Year	Division/ Grade	Subjects
Ph.D.	Indian Institute of Technology Bombay	2018		Thesis: Robust and Efficient Unsupervised Image Co-segmentation
M.Tech.	Indian Institute of Technology Guwahati	2012	1 st	Electronics and Electrical Engineering (Signal Processing)
B.Tech.	West Bengal University of Technology (now MAKAUT)	2010	1 st	Electronics and Communication Engineering
Higher Secondary Examination (10+2)	West Bengal Council of Higher Secondary Education	2006	1 st	Science
Secondary Examination (10th)	West Bengal Board of Secondary Education	2004	1 st	

9. Academic/Administrative Responsibilities within the University

Position	Faculty/Department/Centre/Institution	From	To

National Institute of Technology, Tiruchirappalli: Performa for CV of Faculty/ Staff Members

10. Academic/Administrative Responsibilities outside the University

Position	Institution	From	To
Library committee member	Dhirubhai Ambani Institute of Information and Communication Technology (DA-IICT)	25.11.2020	15.07.2022
Web committee member	DA-IICT	25.11.2020	30.11.2021
Time-table committee member	DA-IICT	01.08.2022	14.10.2022

11. Awards, Associateships etc.

Year of Award	Name of the Award	Awarding Organization
2015	Conference Travel Grant for the 22 nd IEEE International Conference on Image Processing (ICIP) 2015	IEEE Signal Processing Society
2018	Institute Research Associateship	IIT Bombay

12. Fellowships

Year of Award	Name of the Fellowship	Awarding Organization	From (Month/Year)	To (Month/Year)
2010	GATE Fellowship for M.Tech.	MHRD	July 2010	May 2012
2012	Ph.D. Fellowship	MHRD	July 2012	June 2017

13. Details of Academic Work

(i) Curriculum Development

- Designed Computer Vision course for M.Tech. 2nd year students at DA-IICT.

(ii) Courses taught at Postgraduate and Undergraduate levels

Undergraduate	Postgraduate
Basics of Electrical and Electronics Engineering	Computer Vision
Signals and Systems	
Data Structures and Algorithms	

(iii) Projects guided at Postgraduate level

- Cross-modal remote sensing image retrieval
- Common object segmentation in dynamic image collection using attention mechanism
- Deep learning based nuclei segmentation in histopathological images
- Automatic text translation of multilingual sentences using transformer
- Cross-domain person re-identification
- Shadow detection and removal from images

National Institute of Technology, Tiruchirappalli: Performa for CV of Faculty/ Staff Members

- Generating targeted adversarial attacks and assessing their effectiveness in fooling deep neural networks

(iv) Other contribution(s)

- Question setting and interview for admissions and PhD comprehensive examinations at DA-IICT
- PG thesis evaluation at DA-IICT
- Served as reviewers for national, international conferences and journals

14. Details of Major R&D Projects

Title of Project	Funding Agency	Duration		Status
		From	To	Ongoing/ Completed

15. Number of PhDs guided

Name of the PhD Scholar	Title of PhD Thesis	Role(Supervisor/ Co-Supervisor)	Year of Award

16. Participation in Workshops/ Symposia/ Conferences/ Colloquia /Seminars/ Schools etc. (mentioning the role)

Date (s)	Title of Activity	Level of Event (International/ National/ Local)	Role (Participant/ Speaker/ Chairperson, Paper presenter, Any other)	Event Organized by	Venue
Dec 2014	ICVGIP Conference & Workshop	International	Paper presenter & Participant	ACM and IUPRAI	IISc Bangalore
Sep 2015	ICIP Conference & Workshop	International	Paper presenter & Participant	IEEE	Quebec City
Oct 2016	ECCV Conference & Workshop	International	Paper presenter & Participant	University Of Amsterdam	Amsterdam
June 2018	Workshop	National	Participant	IISc Bangalore and Broadcom	IISc Bangalore
Dec 2018	ICVGIP Conference & Workshop	International	Participant	ACM and IUPRAI	IIIT Hyderabad
Oct 2020	Training Programme	National	Participant	Centre for Development of Advanced	Online

**National Institute of Technology, Tiruchirappalli:
Performa for CV of Faculty/ Staff Members**

				Computing	
Aug 2021	Training Programme on ML/DL for Earth Observations (EO) Applications	National	Speaker	Space Applications Centre, ISRO	Online

17. Workshops/ Symposia/ Conferences/ Colloquia/Seminars Organized (as Chairman/ Organizing Secretary/ Convenor / Co-Convenor)

Title of Activity	Level of Event (International/ National/ Local)	Date (s)	Role	Venue
National Seminar of New Trends in Signal Processing (NeTSiP 2021)	National	19-21 March, 2021	Session Chair	Online

18. Invited Talks delivered

Topic	Date	Inviting Organization
Image Co-segmentation using Subgraph Matching	17.07.2020	School of Electrical and Electronics Engineering, VIT Bhopal University, Bhopal
Segmentation of CT scan data	07.10.2020	Centre for Artificial Intelligence and Language Processing, DA-IICT
Segmentation of Histopathological Data and CT Scan data	03.06.2022	Indian Institute of Public Health Gandhinagar (IIPHG)

19. Membership of Learned Societies

Type of Membership (Ordinary Member/ Honorary Member / Life Member)	Organization	Membership No. with date
Ordinary	IEEE	93473825 (Annual)
Ordinary	IEEE Signal Processing Society	
Ordinary	IEEE Computer Society	

20. Academic Foreign Visits

Country	Duration of Visit	Programme

**National Institute of Technology, Tiruchirappalli:
Performa for CV of Faculty/ Staff Members**

21. Publications

(A) Refereed Research Journals:

Author(s)	Title of Paper	Journal	Volume (No.)	Page numbers	Year	Impact Factor of the Journal (Optional)
Avik Hati, Subhasis Chaudhuri, Rajbabu Velmurugan	An Image Texture Insensitive Method for Saliency Detection	<i>Elsevier Journal of Visual Communication and Image Representation</i>	43	212-226	2017	2.887 (on 15.11.2022)

(B) Conferences/Workshops/Symposia Proceedings

Author(s)	Title of Abstract/ Paper	Title of the Proceedings	Page numbers	Conference Theme	Venue	Year
Avik Hati, Subhasis Chaudhuri, Rajbabu Velmurugan	Saliency Detection based on a Sparsity of Segments Model	9th Indian Conference on Vision, Graphics and Image Processing (ICVGIP)	40:1-40:8	Vision, Graphics and Image Processing	Bangalore	2014
Avik Hati, Subhasis Chaudhuri, Rajbabu Velmurugan	Salient Object Carving	22nd IEEE International Conference on Image Processing (ICIP)	1767–1771	Image Processing	Quebec City	2015
Avik Hati, Subhasis Chaudhuri, Rajbabu Velmurugan	Image Co-segmentation using Maximum Common Subgraph Matching and Region Co-growing	14th European Conference on Computer Vision (ECCV)	736–752	Computer Vision	Amsterdam	2016
Avik Hati, Subhasis Chaudhuri, Rajbabu Velmurugan	Co-segmentation of Non-homogeneous Image Sets	25th IEEE International Conference on Image Processing (ICIP)	266-270	Image Processing	Athens	2018

**National Institute of Technology, Tiruchirappalli:
Performa for CV of Faculty/ Staff Members**

Sayan Banerjee, Avik Hati, Subhasis Chaudhuri, Rajbabu Velmurugan	Image Co-segmentation using Graph Convolution Neural Network	11th Indian Conference on Vision, Graphics and Image Processing (ICVGIP)	57:1-57:9	Vision, Graphics and Image Processing	Hyderabad	2018
Sayan Banerjee, Avik Hati, Subhasis Chaudhuri, Rajbabu Velmurugan	CoSegNet: Image Co-segmentation using a Conditional Siamese Convolutional Network	28th International Joint Conference on Artificial Intelligence (IJCAI)	673-679	Artificial Intelligence	Macao	2019
Avik Hati, Matteo Bustreo, Diego Sona, Vittorio Murino, Alessio Del Bue	Weakly Supervised Geodesic Segmentation of Egyptian Mummy CT Scans	25th IAPR International Conference on Pattern Recognition (ICPR 2020)	5565-5572	Pattern Recognition	Milan	2021
Meet Shah, Srimanta Mandal, Shruti Bhilare, Avik Hati	Increasing Transferability by Imposing Linearity and Perturbation in Intermediate Layer with Diverse Input Patterns	14th IEEE International Conference on Signal Processing and Communications (SPCOM)	1-5	Signal Processing and Communications	Bangalore	2022
Shivangi Gajjar, Avik Hati, Shruti Bhilare, Srimanta Mandal	Generating Targeted Adversarial Attacks and Assessing their Effectiveness in Fooling Deep Neural Networks	14th IEEE International Conference on Signal Processing and Communications (SPCOM)	1-5	Signal Processing and Communications	Bangalore	2022
Krunal Mehta, Manish Khare, Avik	Integration of GAN and Adaptive Exposure	7th IAPR International Conference on Computer Vision	accepted	Computer Vision and Image Processing	Nagpur	2022

National Institute of Technology, Tiruchirappalli:
Performa for CV of Faculty/ Staff Members

Hati	Correction for Shadow Removal	and Image Processing (CVIP)				
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(C) Books & Monographs

Author(s)	Title of Book/Monograph	Name of Publishers	Year of Publication	ISSN/ISBN Number
Arnab Pattanayak, Avik Hati, SP Duttagupta	Book Chapter: “Beam Steering of Antenna Array using Phase Gradient Metasurface”, Handbook of Metamaterial-Derived Frequency Selective Surfaces (Metamaterials Science and Technology)	Springer	2021	ISSN: 2523-7942 ISBN: 978-981-16-6440-3
Avik Hati, Rajbabu Velmurugan, Sayan Banerjee, Subhasis Chaudhuri	Monograph: Image Co-segmentation	Springer	2023	in press