



TO MAGNIFICO RETTORE OF UNIVERSITA' DEGLI STUDI DI MILANO

I the undersigned asks to participate in the public selection, for qualifications and examinations, for the awarding of a type A post-doc fellowship

Gajendra Sharma

CURRICULUM VITAE

PERSONAL INFORMATION

Surname	Sharma
Name	Gajendra
Date of birth	[05, 01, 1985]

PRESENT OCCUPATION

Appointment	Structure
Regular	Associate professor

EDUCATION AND TRAINING

Degree	Course of studies	University	year of achievement of the degree
Degree		RGPV Bhopal	2007
Specialization	Electronics and instrumentation		
PhD	Acoustic Signal Processing		2017
Master	Measurement and Control	RGPV Bhopal	2010
Degree of medical specialization			
Degree of European specialization			
Other			

REGISTRATION IN PROFESSIONAL ASSOCIATIONS



Date of registration	Association	City

FOREIGN LANGUAGES

Languages	level of knowledge
English	Read and write

AWARDS, ACKNOWLEDGEMENTS, SCHOLARSHIPS

Year	Description of award
2011-16	MHRD fellowship during doctoral degree

TRAINING OR RESEARCH ACTIVITY

description of activity

My Ph.D. topic was **Detection of Tree cutting and Vehicle movement in Forest environment**. During, the doctoral research work I have applied soft computing techniques such as Neural Network, Random Forest Classifier and Gauss Bayesians on the acoustic emitted signals during the events.

I had developed acoustic data capturing technique during my doctoral research work and primary experiment was conducted onsite (Forest). This work includes acoustic recording of tree cutting using cutting tools such as Axe and saw, recording of vehicle movement in forest. The axe impact and saw scratching on the bole was considered as tree cutting event. The tractor trolley and loading truck passing an acoustic emitted signal in the forest was considered as a vehicle movement event. Forest acoustic modelling is also done and one software was developed for visualization of data in time, frequency and spectrogram domain. I had designed Filter for unwanted signal reduction using soft computing algorithm. 3 D modelling of wireless sensor network for radio coverage problem is also consider in my thesis. To deploy wireless sensor network in forest environment, a deployment strategy focused on coverage was also proposed.

In addition to this, during my research work, I involved in the instrumentation, sensor design, algorithm development and energy harvesting. **Hardware:** Low amplitude acoustic signal preamplifier designed and acoustic recording setup development.



PROJECT ACTIVITY

Year	Project
2011-16	NSF-DeitY on Protection of protected forests, wildlife and human being during my research work.
	<p>Deforestation and Trade Monitoring Paradigm (DTMP) is proposed during my research work. The lumberjack in India commonly used axe and saw for cutting of the tree. The acoustic signal produced during the cutting process and recognize as a tree cutting event. Similarly, vehicle movement on the muddy road produces acoustic signals through the engine of the vehicle and other sources namely exhaust, trolley and so on.</p> <p>An optimal deployment of sensor on the forest environment is the main concern of the proposed research work. The current work is limited to where nodes deploy according to the interest of event (coverage) and connectivity of the sensor network.</p>

PATENTS

Patent

CONGRESSES AND SEMINARS

Date	Title	Place

PUBLICATIONS

Books
[title, place, publishing house, year ...]
[title, place, publishing house, year ...]
[title, place, publishing house, year ...]

Articles in reviews
<ol style="list-style-type: none">1. A new approach for tree chopping by axe acoustic scene classification.2. Moving vehicle recognition in forest using acoustic scene.

Congress proceedings
Acoustic Signal Classification for Deforestation Monitoring: Tree Cutting Problem.



Sharma G Acoustic Signal Classification for Deforestation Monitoring: Tree Cutting Problem. J Comput Sci Syst Biol 11: 178-184. [(2018)]

Compressed sensing based acoustic event detection in protected area networks with wireless multimedia sensors
 Singh, V.K., Sharma, G. and Kumar, M., 2017. Compressed sensing based acoustic event detection in protected area networks with wireless multimedia sensors. Multimedia Tools and Applications, 76(18), pp.18531-18555.[2017]

Realistic acoustic sensor network deployment and radio coverage in terrain profile using 3d modeling
 Sharma, Gajendra & Kumar, Manish & Verma, Shekhar. Realistic acoustic sensor network deployment and radio coverage in terrain profile using 3d modeling. International Journal of Engineering & Technology. 7. 15. 10.14419/ijet.v7i1.8.9443. (2018).

An Approach of Automatic Data Collection and Categorization.
 Sharma G., Kumar M., Verma S. An Approach of Automatic Data Collection and Categorization. In: Dash S., Naidu P., Bayindir R., Das S. (eds) Artificial Intelligence and Evolutionary Computations in Engineering Systems. Advances in Intelligent Systems and Computing, vol 668. Springer, Singapore. (2018)

Monitoring Deforestation using Acoustic Signals
 G. Sharma, M. Kumar and S. Verma, "Monitoring deforestation using acoustic signals," 2016 International Conference on Bioinformatics and Systems Biology (BSB), Allahabad, 2016, pp. 1-4.

OTHER INFORMATION

One National conference paper was published
Support Vector for ECG Signal Classification
Proceeding of National Conference on Soft Computing Techniques in Electrical Engineering -2010 Gwalior

Student Supervise

Sn	Title	Number of Students
1	IoT Based Air Pollution Monitoring System Using Arduino	4
2	Fire/Heat Detectors using Arduino Delta T Measurement	
3	Heritage Monitoring in Museums using IoT	
4	Clean Room Process Monitor	
M.Tech Student		
1	Smart and Secure IoT Based Modern Healthcare System Using Body Sensor Network	2
2	Energy Efficient Wireless Sensor Design In Outdoor Scenarios	



UNIVERSITÀ DEGLI STUDI DI MILANO

Declarations given in the present curriculum must be considered released according to art. 46 and 47 of DPR n. 445/2000.

The present curriculum does not contain confidential and legal information according to art. 4, paragraph 1, points d) and e) of D.Lgs. 30.06.2003 n. 196.

Place and date: ____MadanPalle 10-03-2020_____, _____

SIGNATURE

Gajendra Sharma