



Amity University, Noida-Delhi NCR, India
www.amity.edu

AMITY EDUCATION OVERVIEW

- 5 Universities, 150+ Institutions, 17 Schools & Preschools
- 100,000 Students
- 1000 Acres of Campuses and over 5 million sq. ft. of hi-tech buildings
- 9 Global Campuses in London, Singapore, New Jersey, California, Dubai, Mauritius, Romania, Beijing (China), Nanjing (China)
- Pan Africa e-Network Project
- 4,000 Faculty & Scientists
- 508 Patents filed & 600 Case Studies developed by faculty in the last years
- 300 hi-tech Science & Technology Labs
- 250 Programmes covering 45 disciplines
- 80 Linkages with universities globally
- 14,000 on-campus Hostel seats
- 15,000 Scholarship Holders
- 300 Research Projects funded by Govt. Deptts.
- 47,000 on-campus Placements in the last years
- 300 Technology ventures incubated



National Accreditations & Recognitions by Govt. & Leading Organisations



Recognized by University
Grants Commission (UGC)



Accredited by NAAC Grade 'A'



Established under the Amity University
Act through Govt. Legislature



Amity University Uttar Pradesh
Member of Association of Indian Universities



Recognized by Department of
Science & Technology, Govt. of India as
Scientific & Industrial Research Organisation

Recognition By Statutory Bodies



DEC



BCI



CA



NCTE



PCI



RCI

International Accreditations & Recognitions by Govt. & Leading Organisations



ISO 9001-2008 and ISO 14001-2004
Certificate from British Standards Institution (BSI)



Listed in United Nations
list of Global Universities



IET U.K. Accreditation for
B.Tech Programmes



Accreditation from ASIC, UK



Accredited Member of Accreditation Council for
Business Schools and Programs (ACBSP), USA



Member of AACSB, USA



Accreditation to the MBA programme
of Amity University Online



Accreditation from Foundation for International
Business Administration Accreditation (FIBAA)
for Master's program in Service Marketing



Higher Tourism Education
Programme by UNWTO
TedQual Network



Accredited by NAAC with 'A' Grade:

Amity University Uttar Pradesh has been accredited by National Assessment and Accreditation Council (NAAC) with "A" Grade.



AMITY INTERNATIONAL CAMPUSES



Amity London



Amity Singapore



Amity New Jersey



Amity California



Amity Dubai



Amity Mauritius

AMITY UNIVERSITY CAMPUS - DUBAI



AMITY INTERNATIONAL SCHOOL- ABU DHABI



IB School on the water front in Al Bhaya, Abu Dhabi with a capacity of 3000 students with British Curriculum from foundation 1 & 2 until O & A levels plus one year of IB (International Bachelorette)

INTELLECTUAL CAPITAL OF AMITY

Vice Chancellors



Roorkee



Bhagalpur



Rajendra
Agriculture



Rani Durgawati
University



MS University



Kanchi Prakash
Agriculture University



Jiwaji University,
Gwalior



Kumaon
University



Syntex International
Education Centre University



MS University,
Raibak



Dr. Y.S. Parmar University of
Horticulture & Forestry,
Solan, H.P.



Kalings University (Pvt.),
Raigarh, Chhattisgarh



Vice Chairman, AICTE



Director, CSIR



Sr. Executives from the Public Sectors



Distinguished Scientist and
Chief Controller, Research & Development
(Life Sciences & International Cooperation)
at Defence Research



Chairman, Minorities Commission



Secretaries, Govt. of India



Ambassador



Senior Scientists, DST/DRDO



Principal Scientist, IARI



PCC of Forests,
UP Government



Sr. I P S Officers



Vice Chairman, DDA



Generals, Admirals, and Senior Defence Officers



COURSES VIRTUALLY IN EVERY FIELD...

Traditional Courses

- **Actuarial Sc.**
- Anthropology
- Applied Sciences
- **Architecture**
- **Banking**
- **Commerce**
- **Communication**
- **Computer Sciences / IT**
- Design
- **Economics**
- Education
- **Engineering**
- English Literature
- **Fashion**
- Finance
- Fine Arts
- **Hospitality**
- **Insurance**
- Language
- **Law**
- **Management**
- Medical & Allied Sciences
- NGO Management
- Performing Arts
- **Pharmacy**
- Physical Education
- **Physiotherapy**
- Psychology & Behavioral Sc.
- Sanskrit Studies
- Social Science
- **Telecom**
- **Travel & Tourism**



COURSES VIRTUALLY IN EVERY FIELD...

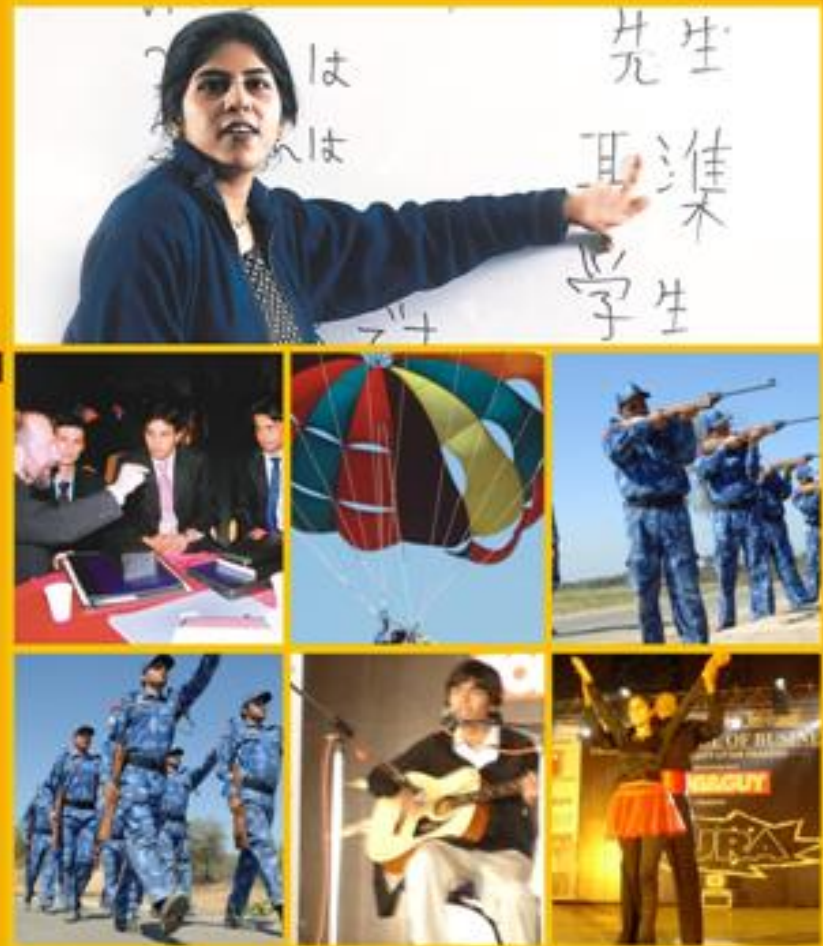
Innovative Courses & Research

- **Advanced Materials & Devices**
- **Aerospace**
- Audiology
- **Avionics**
- Biocontrol & Plant Disease Mgmt
- Biofertilisers & Biopesticides
- **Biotechnology**
- Bioinformatics
- **Biomedical Science**
- Clinical Data Management.
- **Clinical Engg./Research**
- **Cold Chain Management**
- **Competitive Intelligence & Strategic Management**
- Cyber Crime
- Diagnostic Imaging Tech.
- Disaster Management
- Environmental Toxicology Safety & Management
- **Food Technology**
- **Forensic Science**
- Forensic Biology & Serology
- Foundation for Development Disabilities
- Global Warming & Eco Studies
- Herbal Management
- **Horticulture**
- Instrumentation
- Marine Science & Engg
- Medical Lab Technology
- Microbial Sciences
- Microfinancing
- **Nanotechnology**
- Natural Resources & Sustainable Development
- Neuro Psychology & Neuro Sciences
- **Nuclear Science & Technology**
- Organic Agriculture
- Orthodontics & Prosthetics
- **Post Harvest Technology**
- Rural & Urban Management
- **Solar & Alternative Energy**
- **Virology & Immunology**
- Water Technology & Management
- Wild-Life Science



UNIQUE VALUE ADDITION TO LEARNING

- Foreign Languages
- Value Added and Personality Development Courses
 - Communication Skills
 - Behavioural Science
 - Human Values
 - 6 Sigma and 9 other Management & Technology focused courses from BSI
- Curriculum updated regularly with industry input
- Strong Mentoring Programme
- Military cum Adventure Training
- 101 Attributes of Amitians
 - Personality (21)
 - Values/ Ethics (21)
 - Extracurricular Activities (15)
 - Understanding of Socio-economic and Global Environment (18)
 - Academic Excellence (26)



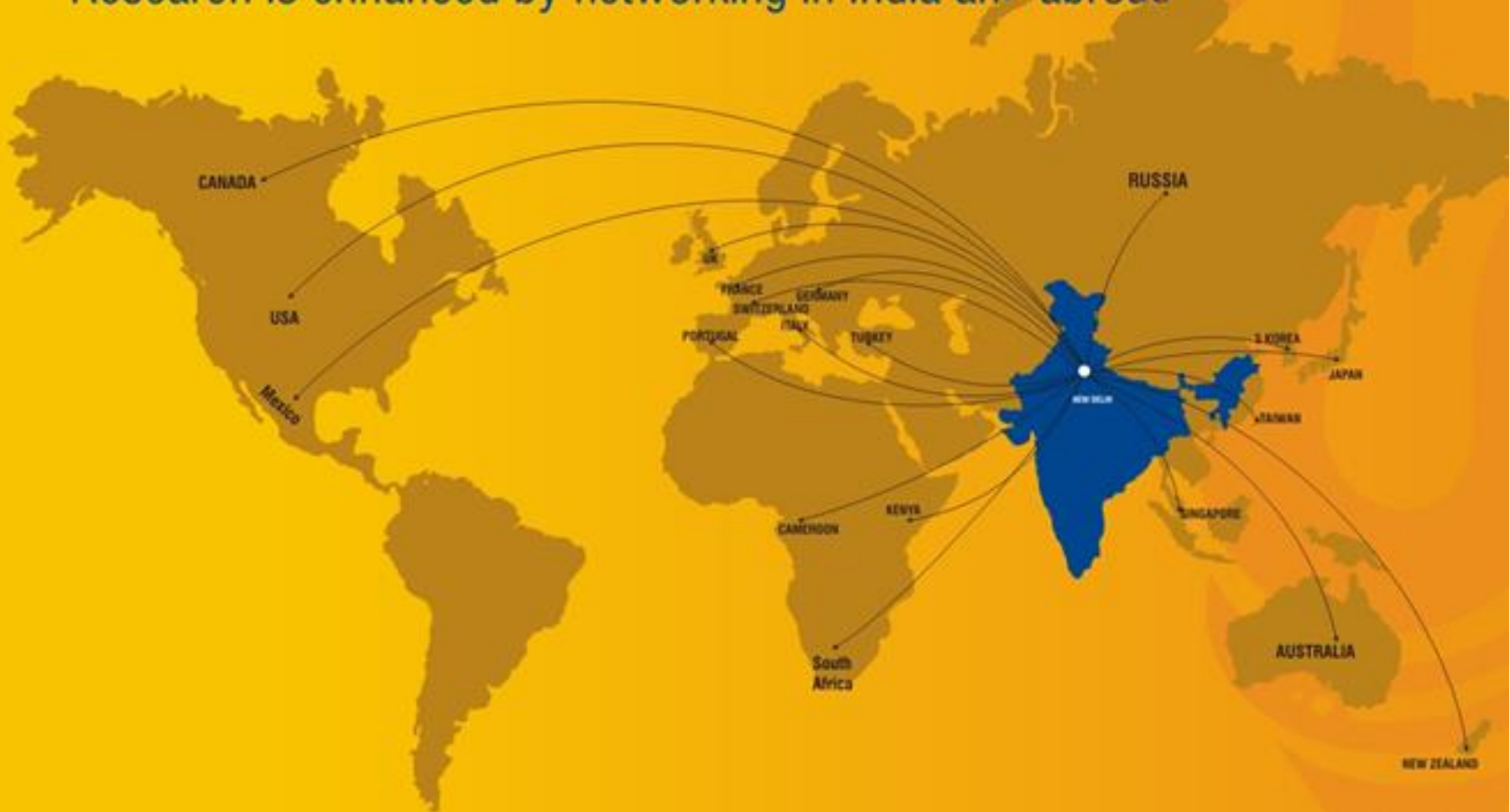
STRONG RESEARCH & DEVELOPMENT FOCUS

- 75 research projects currently operational.
- 120 Books compiled
- 1000 papers published in leading journals
- 508 Patents filed in the area of Nanotechnology, Biotechnology, Biosensors, Herbal, Software, IT, PhotoVoltacs, Electronics, Food Processing, Micro Biology etc.
- Access to over thousand online journals



RESEARCH & COLLABORATION PROJECTS

Research is enhanced by networking in India and abroad



DEVELOPING A CLUSTER OF ENTREPRENEURIAL ACTIVITY

Amity Innovation Incubator (All)

- Incubated Companies have won awards like Microsoft Bizspark, TATA NEN Hottest Startup Contest
- 100+ Companies being incubated
- 8 Companies graduated and performing well on stand-alone basis
- Employment generated for more than 2500 people
- 3500+ Entrepreneurs, Investors & Technologists attended events fostering entrepreneurship eco-system
- Amity University students have established 42 companies
- 508 patents filed by Incubator for entrepreneurs, faculty and researchers
- Ground breaking technologies being commercialized and are utilized by groups such as Delhi Metro, LG Electronics, Aircel, Punjab Police Department, Maruti, Noida Traffic Police
- Fully integrated with Host Institution
- Close ties to VC and Angel networks
- 150+ international delegations have visited the Amity Innovation Incubator
- Strategic collaboration with Incubators in Europe, USA and Asia



AMITY INNOVATION INCUBATOR

If you've a great start-up idea.
we can help you script a success story.



“ Innovation Incubator is a dream place to be in. I came here with an idea and we are a successful company now. The environment here allowed me to be at my highest self, work to depth and generate results. ”

Siddhanth Rathie, Founder@ Udaan Ventures

“ On behalf of the Eduvative team, I would like to thank Amity Innovation Incubator for helping us when we needed the most. The willingness to help and give their time, resources and stupendous infrastructure was a great boost for our company. We are very thankful to the whole Amity Innovation Incubator staff for such a good Effort & Initiative, which will surely help many students who have decided to take different paths in life and have decided to pursue entrepreneurship. ”

Lavi Nigam, Founder@Eduvative



“ Amity Innovation Incubator is a startup booster I would say. I joined in there as a student intern and a few years down the line I am amongst India's youngest CEO's and my startup is amongst India's top 20 hottest startups of the year. From mentoring to funding to recruiting people, the incubator has been supportive in many ways. ”

Siddhant Satija, Founder@Ritsan Media Pvt. Ltd.

Honorary Doctorate Conferred by Amity University



H.E. Dr. Abdullah Gul, President of Turkey



Dr. Karan Singh



Dr. Montek Singh Ahluwalia



Dr. R.A. Mashelkar

WIDESPREAD INTERNATIONAL LINKS

Bring World to Amity and Amity to World

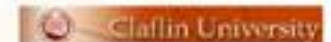
UNIVERSITIES IN EUROPE



WIDESPREAD INTERNATIONAL LINKS

Bring World to Amity and Amity to World

UNIVERSITIES IN NORTH AMERICA

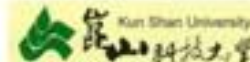
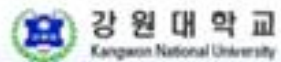


WIDESPREAD INTERNATIONAL LINKS

Bring World to Amity and Amity to World

UNIVERSITIES IN ASIA, AUSTRALIA & SOUTH AFRICA

IN ASIA



IN AUSTRALIA



IN SOUTH AFRICA



NATION BUILDING

Training conducted for over 22,000 Volunteers for Common Wealth Games 2010 in New Delhi

Training conducted for over 50,000 personnel of

- Armed Forces (208 Offr's & 240 PBOs)
- CPOS -BSF, CRPF, CISF, ITBP (230)
- State Police (46,000)
- IFS Officers (851)
- IAS (79)
- State/Central Government Officers (616)
- NGO/Farmers (637)
- PSUs (3600)



THE UNIVERSITY POLITEHNICA OF BUCHAREST,
ROMANIA, HAS HONoured OUR RESPECTED
FOUNDER PRESIDENT WITH HON. DOCTORATE.



THE FUTURE

- 35 Amity Universities in every State & Union Territory of India
- 100 campuses across the country
- Overseas campuses planned



Faculty of Engineering & Technology
Amity School of Engineering and Technology
Department of Electronics &
Communication Engineering.

Amity University, Noida-Delhi NCR, India
www.amity.edu



AMITY UNIVERSITY

UTTAR PRADESH

AMITY SCHOOL OF ENGINEERING & TECHNOLOGY

| Engineering Departments in AMITY SCHOOL OF ENGINEERING & TECHNOLOGY | |
|--|---|
| 1 | Department of Electronic & Communication Engineering |
| 2 | Department of Computer Science & Engineering |
| 3 | Department of Information Technology |
| 4 | Department of Mechanical & Automation Engineering |
| 5 | Department of Civil Engineering |
| 6 | Department of Electrical Engineering |

Department Profile of
Department of Electronics & Communication
Engineering.

Established : 2005

Total Students (UG, PG, Doctorate): 960

Total Teaching Faculty: 60

Technical Staff: 20

Administrative Staff : 3

Research groups: 6

Department of Electronics & Communication Engineering: Programmes Offered

UG Courses

1. B.Tech in Electronics & Communication Engineering
2. B.Tech in Electronics & Communication Engineering + MBA (Dual Degree)

PG Courses

1. Electronics & Communication Engineering
2. VLSI Design
3. Embedded Systems and Technology
4. Wireless Communication.

PhD Courses

In the areas of

1. Microelectronics & VLSI
2. Communication Systems
3. Robotics
4. Signal Processing



AMITY UNIVERSITY

UTTAR PRADESH

AMITY SCHOOL OF ENGINEERING & TECHNOLOGY

**Research Groups in the Dept. of Electronics and
Communication Engineering**

| | |
|---|---|
| 1 | VLSI and Microelectronics Research Group. |
| 2 | Communication Research Group |
| 3 | Signal Processing Research Group |
| 4 | Antenna Theory and Design Research Group |
| 5 | Embedded Systems Research Group |
| 6 | Robotics & Automation Research Group |

Amity School of Engineering & Technology
Department of Electronics & Communication Engineering

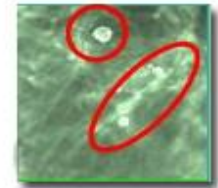
Signal Processing Group



Biometrics



Medical Image Retrival



MSPLAB

Multimedia Signal Processing
Lab



Audio Signal Processing



*Watermarking
Multimedia Security*

1. Current Research Areas

2. Digital Media Security & Watermarking.
3. Biometrics and its application in information security.
4. Medical Image Segmentation & Classification
5. Analysis and Classification of Malign and Benign Masses for Early Detection of Breast Cancer.
6. Identification and Analysis of Brain Signals for Biomedical Application
7. Information Retrieval.
8. Audio Signal Processing – Feature extraction and analysis.
9. Fundus Image analysis and segmentation for eye diseases.
10. Encryption algorithms for template security.
11. Color Image enhancement.
12. Object tracking in video databases.
13. Medical Image watermarking.

Focus: Digital Watermarking of Audio Signals

Research Problem:

Design and Optimization of Efficient, Perceptually Transparent and Robust Watermarking Algorithms.



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Research Objectives :

1. To design, implement and analyze audio watermarking algorithms meeting the requirements of perceptual transparency and robustness.
2. To find the highest watermark bit rate under perceptual transparency constraint and design algorithms to approach the limit.
3. To optimize the conflicting requirements of audio watermarking such as data rate, imperceptibility and robustness.
4. To increase the overall robustness of signal processing attacks on audio watermarking systems by attack characterization during watermark embedding.
5. To design algorithms for countering the challenging attacks of time synchronization attacks and compression.
6. To design algorithms for application specific or content based.
7. To investigate new applications of audio watermarking.



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Manufacturing Process, General Motors, 30500
Mound Road, Warren, MI, USA

Focus: Digital Watermarking of Images

Research Problem:

Design and Analysis of Digital Image Watermarking Techniques
for Digital Right Management.

Research Objectives :

1. To evaluate the new schemes using application scenarios of copyright protection, tamper detection and authentication.
2. Based on the above goal mentioned, the following research problems will be dealt:
 - a) Optimization of the conflicting requirements of digital watermarking.
 - b) Major challenges in robust watermarking.
 - c) How to reduce the computational cost and complexity of a robust watermarking scheme.
 - d) Exploring the domain that suits the requirements for robust watermarking.
 - e) Possibility to create a multipurpose watermarking scheme for copyright protection, tamper detection and content authentication.
 - f) To find the highest watermark bit rate under perceptual transparency constraint and design algorithms to approach the limit.



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Dr. P.S.Kim, PhD

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Focus: Encryption & Security of Biometric Data

Research Problem:

Design and Optimization of Efficient and Robust Encryption Algorithms for biometric Templates.

Research Objectives :

1. To design, implement and analyze efficient, computationally cheap encryption algorithms in compressed and uncompressed domain meeting the requirements of perceptual and cryptographic security and apply these for security of biometric templates.
2. Explore the possibility to design schemes which includes joint effort of encryption and digital watermarking for security of Biometric templates.
3. Design algorithms to increase the overall robustness of encryption system to differential and statistical attacks.
4. To optimize the conflicting requirements of template encryption such as perceptual security, robustness and computational complexity.
5. To investigate new potential applications of image encryption.



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Dr. Hicham Atassi, PhD

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Focus: Feature Analysis from Audio Signals.

Research Problem:

Modeling and extraction of multipurpose features from audio signals.

Research Objectives :

1. Develop new set of audio features and strategic combination of different features that achieves high discriminatory power and robustness and selection criteria of the optimal parameters based on their relevance to a given classification task.
2. Music information retrieval where only sampled audio is available i.e. where higher level information about songs such as scores, lyrics or artist names is unavailable.
3. Optimization of the conflicting requirements of audio features and to reduce the computational cost and complexity of existing feature extraction scheme.
4. To design real time application that analyses an incoming unknown audio query and identifies it in few seconds comparing its extracted feature with hundreds (or possibly thousands) of pre computed feature stored in database.
5. Matching of telephonic speech with actual voice of a person with better accuracy and less computational time. The telephonic speech may be distorted by noise, cross talk etc.
6. Emotion recognition in Indian Languages.
7. To construct a multipurpose audio feature and this may be used in more than one application.

Focus: Biometric Based Digital Watermarking

Research Problem:

Biometric based unique key generation for authentic digital watermarking.

Research Objectives :

To develop a watermarking method for digital signals where the watermark will be generated from biometric traits which will be unique for every individual and can be claimed for ownership. This will address the ownership issues of a digital watermark.



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The detailed objectives are as follows:

1. Collect biometric traits like iris, fingerprints etc. to build a database.
2. Use signal processing methods to process these biometric data.
3. These biometric data will be saved as templates in a database.
4. Generate pseudorandom number sequences from the biometric templates.
5. Process these sequences as seeds of digital watermark for watermarking digital signals like image, audio signal, biomedical signals etc using Signal Processing techniques.
6. Insert these watermarks in digital signals using proper algorithms.
7. Test the perceptual transparency and robustness of the techniques.
8. Recover this biometric based watermark from the digital signals.
9. Identification and authentication of these recovered biometric generated key.



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Focus: Breast Cancer Detection using Image Processing

Research Problem:

Analysis and Classification of Malign and Benign Masses for Early Detection of Breast Cancer

Research Objectives :

1. Study of different proposals on mass and microcalcification detection and their critical analysis.
2. To improve the detection accuracy.
3. To improve false positive reduction.
4. Analysis and classification of masses as benign or malignant.



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Focus: Brain Signal Processing

Research Problem:

Identification and Analysis of Brain Signals for Biomedical Application

Research Objectives :

1. Early detection of Alzheimer's disease.
2. Identification of the stage (mild, moderate, severe Alzheimer's, Parkinson's disease).
3. Coherence analysis of the EEG.
4. To investigate nonlinear EEG dynamics in AD to understand the role of nonlinearity in brain functions.

Focus: Fusion of information received through image & audio signals

Research Problem:

To design an effective interface which is able to recognize emotional state of a human by fusing the information retrieved through facial expressions & acoustic features of voice using machine learning and pattern recognition techniques.



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Research Objectives:

1. To study the state of art of related work in the field of Affective Computing.
2. To identify a suitable framework through multiple modalities.
3. To design and implement algorithm suitable for enhancing the emotion recognition capability.
4. To simulate human computer interaction for both able-bodied and disabled user.



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Focus: Medical Image Analysis

Research Problem:

Segmentation of Brain lesions from 2D MR Images

Research Objectives :

1. Develop an Automatic segmentation technique for Segmentation of Brain lesions .
2. Develop an algorithm that can skip the registration step for medical images.
3. Develop an algorithm that is robust to inter-slice intensity variation.
4. Automatic seed selection for Region Growing.
5. To design a suitable threshold for accurate segmentation of brain lesions.



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Focus: Image Retrieval

Research Problem:

Image Retrieval Framework based on
Visually Significant Feature Points

Research Objectives :

1. Visually significant feature point extraction from edge information.
2. Use of wavelet methods to extract the edge information
3. Develop an algorithm that is robust to geometric transformations like rotation and scaling.
4. Use of spatial information of local structures for Image Retrieval task.
5. Testing of Algorithm on standard test databases.
6. Comparing our algorithm against existing techniques.

Focus: Medical Image Segmentation for Retinal Images.

Research Problem:

Design and Development of Computer Aided Diagnosis of Eye Diseases (Diabetic Retinopathy & Glaucoma) and Watermarking of Medical Images for Tele-Ophthalmology.

Research Objectives :

- 1. Design and development of Software for Analysis and segmentation of retinal image for identification of Diabetic Retinopathy.**
Extraction of blood vessels, microaneurysms, hemorrhages, exudates & neovascular fronds .
Labeling of blood vessels, microaneurysms, hemorrhages and exudates.
Classification into different levels of diabetic retinopathy.
- 2. Design and development of Software for Analysis and segmentation of retinal image for identification of Glaucoma:**
Extraction of the Optic nerve head (ONH).
Qualitative (e.g. Optic disc hemorrhages) and quantitative (eg. Optic disk size, Optic Cup/Disk ratio) evaluation of Optic nerve head.
Classification into different stages and forming a Glaucoma Risk Index (GRI) based on the analysis.



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Recent Selected Publications

1. Malay Kishore Dutta, Anushikha Singh, Radim Burget, Hicham Attasi, Ankur Choudhary & K.M.Soni “Generation of Biometric Based Unique Digital Watermark from Iris Image” 36th IEEE International Conference on Telecommunications and Signal Processing (TSP-2013) July, Rome, Italy- Accepted for Publication.
2. Malay Kishore Dutta, Anushikha Singh, K.M.Soni, Radim Burget & Kamil Riha “Watermark Generation from Fingerprint Features for Digital Right Management Control” 36th IEEE International Conference on Telecommunications and Signal Processing (TSP-2013) July, Rome, Italy. - Accepted for Publication.
3. M Partha Sarathi, M. A. Ansari, Vaclav Uher, Radim Burget & M.K.Dutta, “Automated Brain Tumor Segmentation using Novel Feature Point detector and Seeded Region Growing” 36th IEEE International Conference on Telecommunications and Signal Processing (TSP-2013) July, Rome, Italy. - Accepted for Publication.
4. Yara Omran, Kamil Riha, Malay Kishore Dutta “Automatic Estimation of the Arterial Parameters in Ultrasound Video Sequence” 36th IEEE International Conference on Telecommunications and Signal Processing (TSP-2013) July, Rome, Italy – Accepted for Publication.
5. Radim Burget, Jaynendra Kumar Rai, Vaclav Uher, Jan Masek, M.K.Dutta “Supervised Video Scene Segmentation using Similarity Measures” 36th IEEE International Conference on Telecommunications and Signal Processing (TSP-2013) July, Rome, Italy - Accepted for Publication.
6. Petr Cika, Martin Zukal, Zdenek Libis, Malay Kishore Dutta, “Tracking and Speed Estimation of Selected Object in Video Sequence” 36th IEEE International Conference on Telecommunications and Signal Processing (TSP-2013) July, Rome, Italy - Accepted for Publication.

Recent Selected Publications. (Contd.)

7. Vaclav Uher, Radim Burget, Jan Masek, Malay Kishore Dutta, “3D Brain Tissue Selection and Segmentation from MRI” 36th IEEE International Conference on Telecommunications and Signal Processing (TSP-2013) July, Rome, Italy - Accepted for Publication.
8. Malay Kishore Dutta, Anushikha Singh, K.M.Soni, Radim Burget & Kamil Riha, “Watermarking of Digital Media with Encrypted Biometric Features for Digital Ownership” – International Conference in Contemporary Computing, Noida, India, Proceedings to be published by IEEE, - Communicated and under review.
9. Arashdeep Kaur, Malay Kishore Dutta, K.M.Soni and Nidhi Taneja, “A Blind Audio Watermarking Algorithm Robust Against Synchronization Attacks” IEEE International Conference on Signal Processing, Computing and Control (2013 IEEE ISPCC) - Accepted
10. Malay Kishore Dutta, Anushikha Singh, K.M.Soni & Tanveer A Zia, “An Efficient and Secure Digital Image Watermarking Using Features from Iris Image”- IEEE International Conference on Signal Processing, Computing and Control (2013 IEEE ISPCC)- Communicated & under review.
11. Garima Mehta, Malay Kishore Dutta, Jane Karasek & Pyung Soo Kim, “An Efficient and Lossless Fingerprint Encryption Algorithm using Henon Map and Arnold Transformation” - IEEE International Conference in Contemporary Computing, Noida, India, Communicated and under review.
12. Ondrej Smirg, Zdenek Smekal, Malay Kishore Dutta, ‘Automatic Detection of the Direction and Speed of Moving Objects in the Video’ – IEEE International Conference in Contemporary Computing, Noida, India, Communicated and under review.
13. Jan Karasek, Vaclav Uher, Radim Burget & Malay Kishore Dutta “Optimization of Logistic Distribution Centres Process Planning and Scheduling” - IEEE International Conference in Contemporary Computing, Noida, India, Communicated and under review.

Recent Selected Publications. (Contd.)

14. Malay Kishore Dutta, Vinay K. Pathak and Phalguni Gupta “A Perceptible Watermarking Algorithm for Audio Signals” Multimedia Tools and applications, Springer Verlag Publishers, Germany, February 2012, pp. 1-23, DOI: 10.1007/s11042-011-0945-4.
15. Malay Kishore Dutta, Phalguni Gupta and Vinay K. Pathak, “An Adaptive Robust Watermarking Algorithm for Audio Signals using SVD” – *Transactions on Computational Sciences Journal*, Vol. 6340, 2010, pp. 131–153, Springer Verlag Publishers, Germany.
16. Malay Kishore Dutta, Phalguni Gupta and Vinay K. Pathak “Audio Watermarking Using Pseudorandom Sequences Based on Biometric Templates”- *Journal of Computers*, Vol. 5, No. 3, 2010, pp. 372-379, Academy Publishers, Finland.
17. Malay Kishore Dutta, “Perceptible Watermarking: A Promising Application” - *International Journal of Electronic Security and Digital Forensics*. Vol. 3, No. 4, 2010, pp. 363-375. Inderscience Publishers, UK.
18. Shashank Shekhar, Harshita Srivastava and Malay Kishore Dutta “An Efficient Adaptive Encryption Algorithm for Digital Images” *International Journal of Computer and Electrical Engineering (IJCEE)*, Vol. 4, No. 3, June 2012, pp.380-383, International Association of Computer Science & Information Technology Press. Singapore.
19. Malay Kishore Dutta, Vinay K. Pathak and Phalguni Gupta “ A Robust Watermarking Algorithm for Audio Signals using SVD” – International Conference on Contemporary Computing, CCIS Vol. 94, Part 1 , 2010, pp. 84–93, Noida, India. Published by Springer Verlag Publishers, Berlin Heidelberg, Germany.
20. Malay Kishore Dutta, Phalguni Gupta and Vinay K. Pathak “Blind Watermarking in Audio Signals using Biometric Features in Wavelet Domain”, International Conference of IEEE Region 10, TENCON 2009, 2009, pp-1-5, Singapore. Published by IEEE, New York USA.
21. Malay Kishore Dutta, Phalguni Gupta and Vinay K. Pathak “Perceptible Watermarking for Digital Right Management Control” – International Conference on Information, Communications and Signal Processing, IEEE Communications Society, 2009, pp-1-5, Macau, SAR China. Published by IEEE.

Recent more Selected Publications. (Contd.)

22. Malay Kishore Dutta, Phalguni Gupta and Vinay K. Pathak *"Biometric Based Unique Key Generation for Audio Watermarking"*- Proceedings of International Conference on Pattern Recognition and Machine Intelligence, LNCS, Vol. 5909, 2009, pp- 458-463, IIT Delhi, India, Published by Springer Verlag Publishers, Berlin Heidelberg, Germany.
23. Malay Kishore Dutta, Phalguni Gupta and Vinay K. Pathak *"Biometric Based Audio watermarking"* – International Conference in Multimedia Information and Networking Security, 2009, pp- 10-14, Wuhan, China. Published by IEEE Computer Society, USA.
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26. Ankit Murarka, Anshul Vashist and Malay Kishore Dutta, *"A Blind Watermarking Algorithm for Audio Signals Based on Singular Value Decomposition"*, Third International Conference on Recent Trends in Information, Telecommunication and Computing – ITC 2012, Bangalore, pp. 383-388 Proceedings published by Springer Verlag Publishers, Germany.
27. Sourabh Dimri, Sudhir Singh, Arshdeep Kaur & M.K Dutta, *"A Robust Watermarking Algorithm Based on Multi Resolution Decomposition of Audio Signal"*, 3rd International Conference on Computer and Communication Technology (ICCCT-2012) , MNIT, Allahabad, pp-299-302, Proceedings published by the IEEE, USA.
28. Ankit Murarka, Anshul Vashist, Malay Kishore Dutta *"A Blind Watermarking Algorithm for Audio Signals Based on Singular Value Decomposition, Discrete Wavelet Transform and Chaotic Mapping"* - NUICONE 2012, Ahmedabad, pp. 1-5, Proceedings published by the IEEE, USA. DOI: 10.1109/NUICONE.2012.6493173

Some more selected Publications (Contd.)

29. Malay Kishore Dutta, Anushikha Singh & K.M.Soni, "A Secure Algorithm for Biometric Based Digital Image Watermarking in DCT Domain" International Journal of Computer Vision and Robotics, Inderscience Publishers, U.K.- Communicated and under review.
30. Yashu Rajput, Anita Thankur & Garima Vyas "Advance Image enhancement based on wavelet & histogram equalization for medical images" International organization of scientific research (IOSR) Journal, volume 2, issue 6,pp. 211-216, October 2012
31. Garima Vyas "Implementation of Advanced Image Compression using Wavelet Transform and SPHIT Algorithm" International Journal of Electronic and Electrical Engineering, Volume 4, Number 3, pp. pp. 249-254, 2011
32. Garima Vyas " Fingerprint compression using wavelet" National conference at Devi Ahilya university Indore, Dec 2010
33. Garima Vyas "Shadow detection of moving and static objects using RGB" National Conference at Lingaya university, Faridabad, Feb 2010

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