Important Dates

Last date for GIAN registration: **20-Sept-2017**
Intimation to participants**: 22-Sept-2017**
Last date of receiving DD: **03-Oct-2017**
Course dates: **09-Oct-2017 to 18-Oct-2017**

Selection will be as per the eligibility, and on First-Come-First-Served basis. For more details Click here: Link for Boucher

Registration Fee Details

Candidates have to remit the necessary course fee in form of Demand Draft which should be drawn in favor of '**Continuing Education, NIT Rourkela**' payable at **SBI, NIT Rourkela.**

Participants from abroad : US $500
Industry/ Research Organizations : INR 10000
Academic Institutions (Faculty): INR 5000
Students: INR 2000

N.B.: Candidates registering early will be given preference in the short-listing process.

The registration includes instructional materials, computer use for tutorials, assignments, laboratory equipment and internet usage charges. Registration does not include food and accommodation. However, it can be provided on payment basis.

About GIAN

Govt. of India introduced a new program titled Global Initiative of Academic Networks (GIAN) in Higher Education aimed at tapping the talent pool of scientists and entrepreneurs, internationally to encourage their engagement with the institutes of Higher Education in India so as to augment the country's existing academic resources, accelerate the pace of quality reform, and elevate India's scientific and technological capacity to global excellence.

http://www.gian.iitkgp.ac.in//files/brochures/BR1502467176 gian_broachure_brain_MRI_14661.pdf (Online brochure)

About Institute

NIT Rourkela is one of the premier national level institutions for technical education in the country and is funded by the Government of India. The main objective of the Institute is to produce quality Engineers and Scientists in Graduate and Post-Graduate levels in various branches of Engineering and Science. According to the Times Higher Education (THE) ranking of the World's best Universities 2017, it is ranked in top 800 institutes of world, and it is only NIT to feature in the list. According to the QS University ranking: BRICS 2016 has figured NIT Rourkela in the list of 111-120 top universities in Brazil, Russia, India, China and South Africa.
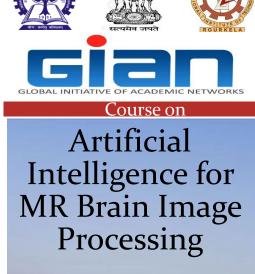
About Department

The Department of Computer Science and Engineering was established in the year 1983 with the recent technological advancements in Computer Science. The department has currently 19 faculty members with different research and teaching expertise in the field of Computer Science. The Department offers B.Tech and B.Tech Dual degree in CSE. The department also offers M.Tech in four specializations (CSE, Information Security, Software Engineering, and Data Analytics). The department offers Ph.D in CSE with full time research scholars. The department runs several sponsored projects from government organizations like DST, SERB, BRNS, DRDO, etc.

Contact Details

Dr. Banshidhar Majhi & Dr. Ratnakar Dash
Department of Computer Science & Engg.
National Institute of Technology Rourkela, Odisha, India -769008.
Phone: +91- 9437221124 / 9861379338
Email: ratnakar@nitrkl.ac.in

For Query mail us at gian.mrbip@gmail.com or contact: **+91-9861352739 (Deepak R Nayak)**

Course on

Artificial Intelligence for MR Brain Image Processing

October 9, 2017-October 18, 2017

Call for Registration and Participation

International Faculty

Dr. Yudong Zhang
School of Computer
Nanjing Normal University, China

Course Coordinators

**Dr. Banshidhar Majhi &
Dr. Ratnakar Dash**
Department of Computer Science & Engg.
National Institute of Technology, Rourkela.

Organized by

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

National Institute of Technology Rourkela, Rourkela, Odisha, India - 769008

Overview of The Course

Brain diseases are one of the leading causes of death in people with different age groups across the globe. Early detection of brain diseases not only help the radiologist to treat better, but also reduces the mortality rate. As a consequence, many automated systems have been devised in past years. Magnetic resonance imaging (MRI) is the most popular advanced neuroimaging used in both hospitals and institutes, due to its better resolution of brain tissues and its radiation-free properties as compared to traditional imaging modalities such as CT and X-ray. Nevertheless, to interpret a magnetic resonance (MR) images need the expertise from neurologists, physicians, and radiologists. Besides, manual interpretation suffers from fatigue and may be non-repeatable. They express thus a strong demand for detection, quantification and classification support tools in diagnostic and interventional procedures. In past decades, artificial intelligence (AI) has been successfully applied to medical image processing to devise CAD systems for physicians' use and gaining importance across the globe. The goal of this course is to provide attendees with innovative, high-impact research evidence related to the evaluation and treatment of several brain related diseases. This course will provide a detail description of the fundamentals of MRI processing and the latest advances in computer vision (CV) and AI.

Course Content

- Fundamentals of brain Magnetic Resonance Imaging (MRI)
- Preprocessing techniques in MRI
- Feature extraction techniques (wavelet and its varinats, curvelet, ripplet, etc.)
- Fundamental of AI techniques (ANN, Non-Parallel SVM, Parallel SVM, etc.)
- Advanced AI techniques (Extreme Learning Machine, kernel ELM, evolutionary ELM, etc.)
- Autoencoder, sparse autoencoder, stacked autoencoder, convolutional neural network

Course Faculty

Dr. Yudong Zhang received his Ph.D. degree in Signal and Information Processing from Southeast University, China in 2010. From 2010 to 2012, he worked at Columbia University as a postdoc scholar under the supervision of Prof. Zhengchao Dong. From 2012 to 2013 he worked as a research scientist at Columbia University and New York State Psychiatric Institute under supervision of Prof. Zhengchao Dong. At present, he is a full professor and doctoral advisor at School of computer science and technology at Nanjing Normal University. He also serves as the academic leader of "Jiangsu key laboratory of 3D printing equipment and manufacturing". His research interests focus on computer-aided diagnosis and biomedical image processing. Dr. Zhang was included in "2014-2016 Most Cited Chinese Researchers (Computer Science)" released by Elsevier. His fifteen papers were included in "ESI Highly Cited Papers". He won the "Emerald Citation of Excellence 2017". He is the senior member of IEEE and ACM. He is the author and co-author of over 110 SCI-indexed papers. Besides, he is the author of 12 EI-indexed papers. He authored one academic monograph, and coauthored 10 book chapters.

Dr. Banshidhar Majhi is a Professor in the Department of Computer Science and Engineering at National Institute of Technology, Rourkela. He is presently Director at IIIT-DM, Kancheepurum, Chennai on lien. His research interests include image processing, cryptography and security, parallel computing, biomedical signal analysis, and biometrics. He is the author and co-author of over 75 SCI-indexed journal papers. He is a professional member of IEEE, FIETE, LMCSI, IUPRAI, and FIE.

Dr. Ratnakar Dash is a faculty member in the Department of Computer Science and Engineering at National Institute of Technology, Rourkela, India. His field of interests include signal processing, image processing, steganography, medical image analysis, recognition, medical image etc.

Who Can Participate?

- You are graduate or undergraduate student in Electronics, Computer Science, Electrical, Biomedical Engineering, Mathematics, and Statistics.
- You are a clinical scientist working with medicine industry and healthcare domain or want to pursue your career in MRI analysis.
- You are a Ph.D. student or faculty from academic institution interested in developing automated pattern recognition systems using advanced AI and CV algorithms.

How to Register?

Registration to this course is a two-step process:
Participants will have to first register to the GIAN portal. It is a one-time process. One time Non-refundable fee of Rs. 500/- is to be charged for this service. You are required to apply online using the following steps in the given link:

1. Apply online for registration. Go to: http://www.gian.iitkgp.ac.in/GREGN/index
2. Fill up the registration form.
3. Pay Rs 500/- (non-refundable) through online payment Gateway.
4. Click on course registration option at the top of registration form. Select the course titled "Artificial Intelligence for MR Brain Image Processing" from the list and click on Save option. Confirm your registration by clicking on Confirm Course.

The course coordinators will confirm your selection as a participant in due course of time. Once you are selected, you will be informed by email and will be requested to pay the full fees through Demand Draft and fill the course registration details in following link: https://goo.gl/forms/2yWyPKRBAHTiMiok2
NB: Please send the DD and registration copy (from GIAN) by post to Dr. Ratnakar Dash (coordinator), Department of Computer Science & Engg., NIT Rourkela, Rourkela – 769008. The DD and the registration copy must reach the Coordinator on or before **3rd October 2017**.