



A Five Day GIAN Course on SOCIAL SIGNAL PROCESSING

About GIAN

MHRD, Govt. of India has launched an innovative program titled “Global Initiative of Academic Networks (GIAN)” in higher Education, in order to garner the best international experience. As part of this, internationally renowned Academicians and Scientists are invited to augment the Country’s academic resources, accelerate the pace of quality reforms and elevate India’s scientific and technological capacity to global excellence. More details on various GIAN courses are available at <http://www.gian.iitkgp.ac.in/>

Overview of the Course

Social Signal Processing (SSP) is the Artificial Intelligence domain aimed at modelling, analysis and synthesis of nonverbal behaviour in human-human and human-machine interactions. The overall goal of the field is to endow machines with social intelligence, i.e., with the ability to interact with their users in the same way as people interact with one another. The main goal of the course is to introduce the main conceptual and technological elements underlying SSP and its applications. In particular, the lectures include an introduction to social signals and their role in communication, a description of the main technologies aimed at detection and synthesis of social signals, and concrete examples (mostly based on publicly available data and software) aimed at the development of hands-on experience.

Both industry and academia recognise the development of social intelligence in machines as a key-step towards the adoption of AI-driven technologies in everyday life. In particular, the experts of the World Economic Forum have recognised that “If AI systems are indeed ever to walk among us, they’ll have to be able to understand that each of us has thoughts and feelings and expectations [and] they’ll have to adjust their behaviour accordingly”¹. Furthermore, the Oxford Martin Programme on the Impacts of Future Technology states that “[...] the [next] wave of computerisation will depend on overcoming the engineering bottlenecks related to creative and social intelligence”². Last, but not least, the International Federation of Robotics shows that robots interacting with people is the fastest growing area of service robotics. In this respect, Social Signal Processing appears to be a field that is interesting not only from an academic research point of view, but also in terms of its market potential.

¹ <https://www.weforum.org/agenda/2016/11/the-four-types-of-ai-what-you-need-to-know>

² https://www.oxfordmartin.ox.ac.uk/downloads/academic/The_Future_of_Employment.pdf

Modules	<p>I: Social Intelligence and Computing, a general introduction to Social Signal Processing. II: Behaviour observation in view of computer processing and Basic Computational Paralinguistics. III: Psychometrics and Personality Computing. IV: Introduction to Multimodality, Classifier Combination. V: Facial Expression Analysis and Deep Networks for Multimodal Social Signal Processing Introduction to Judgment Studies.</p> <p>(7th to 11th December 2020; 10 Lectures & 5 Lab. Sessions/Tutorials) Number of participants for the course will be limited to fifty.</p>														
Dates for the course	7 th to 11 th December 2020														
Who Should Attend	Student students at all levels (BTech/MSc/MTech/PhD) or Faculty from reputed academic institutions and technical institutions. Industry and other working professionals														
Fees	<p>The participation fees (Excluding Lodging & Boarding) for taking the course is as follows:</p> <p>Students Participants and Scholars : Rs. 2,000/- Faculty (Internal & External) : Rs. 4,000/- Persons working in Industry / Consultancy firms : Rs. 8,000/- Student participants from abroad : USD 100 Other participants from abroad : USD 200</p> <p>The above fee includes all instructional materials, computer use for tutorials and assignments, laboratory equipment usage charges, 24 hrs. free internet facility. The participants will be provided accommodation on additional payment in the Visitors Block on sharing basis.</p> <p>Selected candidates will be intimated through e-mail. They have to remit the necessary course fee to the Bank as per the details given below.</p> <table border="1" data-bbox="667 825 1200 995"> <tr> <td>Account Name</td> <td>GIAN NITW</td> </tr> <tr> <td>Account No.</td> <td>62447453600</td> </tr> <tr> <td>Bank</td> <td>State Bank of India</td> </tr> <tr> <td>Branch</td> <td>NIT Branch</td> </tr> <tr> <td>Branch Code</td> <td>20149</td> </tr> <tr> <td>IFSC Code</td> <td>SBIN0020149</td> </tr> <tr> <td>SWIFT Code</td> <td>SBININBBH14</td> </tr> </table>	Account Name	GIAN NITW	Account No.	62447453600	Bank	State Bank of India	Branch	NIT Branch	Branch Code	20149	IFSC Code	SBIN0020149	SWIFT Code	SBININBBH14
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	Students registered with grading will be evaluated for two credits based on continuous evaluation in tutorials, midterm and end of course examinations. Grade will be awarded based on the performance in the evaluation.														

Registration

Stage-1: Web Portal Registration: Visit <http://www.gian.iitkgp.ac.in/GREGN/index> and create login User ID and Password. Fill up the blank registration form and do web registration by paying Rs. 500/- online through Net Banking/Debit/Credit card. This provides the user with life time registration to enroll in any number of GIAN courses offered.

Stage-2: Course Registration: Login to the GIAN portal with the user ID and Password already created in Stage-1. Click on Course Registration option at the top of Registration form. Select the Course titled “Social Signal Processing” from the list and click on Save option. Confirm your registration by clicking on Confirm Course.

About the Institute and Warangal

National Institute of Technology, Warangal (NITW) formerly known as RECW is the first among seventeen RECs set up in 1959. Over the years, the Institute has established itself as a premier Institution in imparting technical education of a very high standard, leading to B.Tech, M.Tech and Ph.D. programmes in various specializations of Science and Engineering streams. Warangal is known for its rich historical and cultural heritage. It is situated at a distance of 140 km from Hyderabad. Warangal is well connected by rail and road. National Institute of Technology, Warangal campus is 2 km away from Kazipet railway station and 12 km away from Warangal railway station.

About the Department

The Department of Computer Science and Engineering (CSE) offers B.Tech. course in CSE, M.Tech courses in CSE, Computer Science and Information Security (CSIS) and Master of Computer Applications (MCA). The Department has experienced faculty with good publications and well-established laboratories. The department focuses on imparting practical and project-based training to students through competency-based curriculum. The Department has liaison with reputed industries and R&D organizations like Microsoft, IBM, Oracle, Accenture, Infosys, TCS, EMC2, C-DAC, Motorola, NIC, Sun Micro Systems, SPSS and tie up with IISc in certain areas. The Department conducts various sponsored programmes and workshops throughout the year.

The Faculty

International Faculty



Alessandro Vinciarelli is Full Professor at the School of Computing Science and Associate Academic of the Institute of Neuroscience and Psychology. His main research interest is Social Signal Processing, the computing domain aimed at modelling, analysis and synthesis of nonverbal communication in human-human and human-machine interactions. In particular, the work of Alessandro aims at developing computational models capable to infer social and psychological phenomena from nonverbal behavioural cues automatically detected in recordings of human behavior captured with multiple sensors. The goal of his is to make machines socially intelligent, i.e., capable to seamlessly participate in social interactions. He has published more than 150 scientific works including 3 authored book and he has been PI and co-PI of 15 national and international projects. He has supervised 16 PhD students and 8 postdocs. Furthermore, Alessandro is the co-founder of Klewel, a knowledge management company recognised with several national and international awards, and scientific advisor of Neurodata Lab, a top Emotion AI company. Alessandro has chaired and co-chaired over 25 international scientific events

Host Faculty:



Kadambari K V is working as assistant professor in the department of Computer Science and engineering at National Institute of Technology (NIT) Warangal, Telangana State (India). She has 8 years of teaching experience at NIT Warangal. She has published several research papers in international conferences and journals. At present, three Ph.D. scholars are working under her guidance. She has served as the session chair for many conferences and also, served as the program committee member for many international conferences. Kadambari, is a resource person for many faculty development programs/workshops. Her research areas include machine learning, computational neuroscience, deep learning, neuroimaging, modeling and simulation. Webpage: <https://www.nitw.ac.in/faculty/id/16335/>



Tene Ramakrishnudu is currently working as an Assistant Professor in the Department of Computer Science & Engineering, National Institute of Technology, Warangal. He has 14 years of teaching experience at NIT Warangal. He has published several research papers in international conferences and journals. At present, four Ph.D. scholars are working under his guidance. He has served as the session chair for many conferences and also, served as the program committee member for many international conferences. Ramakrishnudu is a resource person for many faculty development programs/workshops. His current research interests include Distributed Data Mining, Big Data Analytics, Text Mining, Social Media Analysis, Large-scale machine learning, and Recommendation Systems.



One-week GIAN course on

SOCIAL SIGNAL PROCESSING

7th to 11th December 2020

Organized by

Department of Computer Science and Engineering

National Institute of Technology-Warangal

Course Coordinators

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