Ethics, Trust, and Usability in Speech Technology
3rd March to 7th March 2025

Department of Humanities, Economics, Arts and Rural Technologies
Indian Institute of Technology, Dharwad, India

About GIAN Course: The Global Initiative of Academic Networks (GIAN) is a program the Ministry of Education, Government of India offers. It aims to tap the talent pool of scientists and entrepreneurs internationally to encourage their engagement with the institutes of higher education in India 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.

About IIT Dharwad: The Indian Institute of Technology Dharwad (IITdh) is one of the third Generation (3-G) IITs, which were established by the Ministry of Education, Government of India (GoI). The academic journey began in the Academic Year 2016-17. Apart from offering B. Tech in Mechanical Engineering (ME), Electrical Engineering (EE), and Computer Science & Engineering (CSE), the institute offers four other B. Tech courses and five-year Bachelor of Science-Master of Science (BS-MS) program, a two-year Master of Technology (M. Tech.) Program and a Master of Science (MS) Program. The Ph. D program is offered by all the ten Departments. The Institute aims to achieve global recognition in education and research by fostering a receptive learning environment, creating knowledge, and innovative technologies. The Institute has carefully planned and built a world-class infrastructure in a sprawling area of 470 acres [encompassing 67 acres of natural forest], which will be net zero in terms of water, energy, and waste.

About the Department: The Department of Humanities, Economics, Arts and Rural Technologies (HEART), has been part of IIT Dharwad since its inception in 2016. With faculty members specialized in fields such as English Literature, Philosophy and Economics, the Department offers a diverse range of courses to B. Tech, M.S, and Ph.D students, aiming to promote critical and analytical thinking, appreciation of arts and aesthetics, and increased awareness of concepts, debates and contexts. The department also offers a full-time doctoral programme to aspiring researchers in the fields of English Literature, Economics, and Philosophy. The Department has fully equipped research scholars' labs that could accommodate 54 research scholars at a time. The faculty members are engaged in various outreach activities, with its faculty actively engaged in collaborations and networking with all prominent institutions in the region around and abroad.

Course Overview: Speech technology has advanced in leaps over the last decade. In many domains, it has reached a quality where it is useful and efficient. The questions then become whether and how speech technology should be used and what is the right way to use speech technology. We must look at the individual and social impact of speech technology, identify any negative consequences, and determine to which extent and where usefulness outweighs the threats. This course pursues a cross-disciplinary investigation into the individual and social impacts of speech technologies. In particular, we discuss the relationship between diversity, privacy, trustworthiness, subjective perception of privacy and trust, as well as sustainability with speech technology. In many cases, such issues have an outsized impact on the usability of the system and mitigation of issues thus necessarily involving studies in user-interface design. The course is proposed to give in-depth exposure to these issues through moderated discussions, lecture presentations, workshops, and group projects. Central to the educational approach is that ethical concerns cannot be learned by reading a book, listening to a monologue, or experimenting with algorithms. Instead, since ethics are always subject to within-community and societal discussions, students should be immersed in discussions to gain experience in and practice discussing ethical topics. The course thus revolves around moderated discussions in groups of different sizes and uses daily learning diaries, each peer-reviewed and commented on by another student.

Intended Learning Outcomes:
1. Confidence and experience in discussing ethical issues within speech technology.
2. Understanding the range of issues where privacy and trust have an impact as well as a basic understanding of subjective perception and user-interface design in relation to privacy and trust.
3. The ability to identify threats to sustainability and detrimental consequences of untrustworthy systems on individual, legal, societal, and economic levels.

4. Knowledge of the broad classes of mitigations as well as hands-on experience with a specific implementation thereof.

Modules	**Day 1:** Overview and Diversity; **Day 2:** Privacy **Day 3:** Trust and trustworthiness; **Day 4:** Perception of privacy and trust; **Day 5:** Sustainability
You Should Attend If	● Research scholars in speech and language technology. ● Engineers working in speech technology development companies. ● Faculty members from academic institutes who are working in the speech processing area. ●Technical experts in governmental organizations involved in regulation and enforcement within speech technology. ● Preference will be given to those interested in privacy and security aspects of speech.
Fees	Registration fees for the course are as follows (inclusive of GST + Overheads): Participants from abroad: USD 300 (Online) & USD100 (On campus) Industry/ Research Organizations: INR 4000 (Online) & INR 2000 (On campus) Academic Institutions (Faculty/Research Scholars/Students): INR 2,500 (Online) & INR 1,000 (On campus) The above fee includes all instructional materials, computer usage for tutorials and assignments, laboratory equipment usage charges, and a 24-hour accessible internet facility. Add Rs. 1000 for award of Grade (on completion of 100% attendance, assignments, and exams). The accommodation to participants will be provided on a payment basis (for more details, contact the Course Coordinator).

Faculty

Prof. Tom Erik Bäckström is an Associate professor in "Speech and language processing" at the Department of Information and Communications Engineering, Aalto University, Finland. He specialises in Acoustics and Audio Signal Processing and focuses on privacy and security in speech communication, speech enhancement, acoustic sensors, network speech and audio coding.

Prof. S. R. Mahadeva Prasanna is a recipient of the National Award for Teachers 2023 from the honourable President of India. Presently, he is working as Director of IIIT Dharwad, on leave from IIT Dharwad. He is a Professor in the Dept. of Electrical, Electronics and Communication (EECE) at IIT Dharwad. He teaches courses in signal processing, speech processing, artificial intelligence, machine learning, and deep learning. His research interests are in speech processing. He has supervised 28 PhD research scholars in the areas of speech and handwriting processing. He has published over 115 journal articles and 200 conference articles in reputed national and international journals and conferences. He has executed large volumes of externally funded projects from public and private funding agencies.

Dr. Jolly Thomas, the Coordinator of the course, is an Assistant Professor of Philosophy in the Department of Humanities, Economics, Arts and Rural Technologies, IIT Dharwad. Dr. Jolly Thomas is specialized in Metaphysics and Philosophical logic. His current areas of research include Ethics and Ethics of AI. He teaches courses in Philosophy, Applied Ethics and Normative Ethics.

Coordinator: joliethomas@iitdh.ac.in;
Phone:+91 7591974136

Brief Bio-data of Foreign Expert: Prof. Tom Erik Bäckström, is presently Associate Professor in "Speech and Language Processing", Department of Information and Communications Engineering, Aalto University, Finland. He obtained his Doctor of Science (Tech.) in Acoustics and Audio Signal Processing, TKK, Finland, 2004 and Master of Science in Information technology, TKK, Finland, 2001. Apart from his present assignment, he had, in the past, was Professor of practice, Dept Signal Processing and Acoustics, Aalto University, 1.8.2016 – 30.11.2019; Professor (W2) in "Speech Coding" at the International Audio Laboratories, Friedrich Alexander University Erlangen-Nürnberg (FAU), as well as a Leading scientist at Fraunhofer IIS, Germany, 15.1.2013 – 31.7.2016; Researcher at Fraunhofer IIS, Germany, 1.8.2008 – 14.1.2013 and Professor (pro term) at TKK, Finland, 1.1.2007 – 31.7.2007.

He has to his credit, 34 journal papers, 81 conference papers, first author/editor of 2 books, contributions to 2 edited books, and other publications, with an H-index of 24.1. He has 25 accepted patents, a majority deployed in international standards and billions of devices. He had received several funding for research like, Seed funding for Unite! "Crossroads of Speech and Language – Teaching and Research" a Master's program across 8 European universities, 8k€, 2023; "Concept development for Life-wide Learning at DICE" funded by Aalto EE, 10k€, 2023; and Developing course ELEC-E5500 to match requirements of FiTech life-wide learning program, funded by Aalto EE, 15k€, 2020.

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APPLICATION FORM

1	Name	
2	Designation	
3	Department/Institution	
4	Gender	Male ☐ Female ☐
5	Highest qualification	
6	Specialization	
7	Mobile No.	
8	Email ID	
9	Signature	

Payment Details

Amount	
Account Name	IIT Dharwad R&D Account
Account Number	4070101001880
Bank	CANARA BANK
Branch	BELUR BRANCH
IFSC	CNRB0004070
MICR Code	580015307

Online Registration :

Fill out the google form using the link to complete the registration process.
https://forms.gle/mVWFG2yQRyh2GhLV8