

Effective Communication Seminar Series  
Department of Electrical Engineering

# Technologies for Indian Languages – solving real problems of real people

20<sup>th</sup> July - 4:00 pm - MMCR

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RAMAKRISHNAN AG

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**Chairman, EE, IISc**

## Abstract

The talk will give an overview of the work carried out in the Medical Intelligence and Language Engineering Laboratory over the past two decades. In 2001, the lab created the vision of creating automated book readers for the blind in Indian languages. The idea was that people with visual disability must be able to access any text in Indian languages that people with normal vision are able to read. This led the lab to Optical character recognition, script recognition at the level of the word to deal with bilingual and trilingual printed text, text-to-speech conversion, text detection and recognition from scene and born-digital images, transcription between any pair of Indian languages and then to recognition of handwriting online. Currently, we are working on automated speech recognition and document image superresolution using deep learning. Our technique of augmenting deep learning with conventional image processing techniques has led to a patent filing in superresolution. Our recent interests are in EEG studies on comatose patients and multimodal recognition of emotion from video images, speech, EEG, ECG, EMG and GSR.

A G Ramakrishnan obtained Sir Andrew Watt Kay Young Investigator Award from the Royal College of Physicians and Surgeons, Glasgow for his Ph D work on the nerve conduction & evoked potential studies on leprosy patients; Manthan Award in 2014 for the impact of his Tamil and Kannada OCR on blind students; Manthan Award in 2015 for the use of his Tamil and Kannada TTS; Prof. Anandakrishnan Award from INFITT for developing Tamil handwriting recognition. [www.kannadapustaka.org](http://www.kannadapustaka.org) provides Braille and audio books of Kannada school texts using his Kannada OCR and TTS. He is a member of the Karnataka Knowledge Commission and FICCI Indian Languages Internet Alliance.