



# CENTRAL INSTITUTE OF INDIAN LANGUAGES

## 53<sup>rd</sup> Foundation Day Lecture Series

### Lecture 23

Wednesday, November 17, 2021 at 11:30 am IST

### Multilingual Computation: its Indispensability in Natural Language Processing



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Pushpak Bhattacharyya is Bhagat Singh Rekhi Chair Professor of Computer Science and Engineering at IIT Bombay. He obtained his B.Tech from IIT Kharagpur, M.Tech from IIT Kanpur and PhD from IIT Bombay. His research areas are Computational Linguistics/ Natural Language Processing and Machine Learning. He has published more than 350 research papers and has authored/co-authored 5 books including a textbook on machine translation. He is Fellow of National Academy of Engineering, Abdul Kalam National Fellow, past President of Association of Computational Linguistics, Distinguished Alumnus of IIT Kharagpur and past Director of IIT Patna. He has guided more than 350 students for their PhD, Masters and Undergraduate thesis. He has received Technology Development awards from IIT Bombay (H.H. Mathur and P.K.Patwardhan) and IIT Roorkey (VNMM) and substantial research grants from governments and top industries.

Multilingual computation is increasingly becoming important for CL/NLP (computational linguistics/Natural Language Processing), where strategies like zero-shot and few-shot learning are gaining ground in the face of resources (i.e., language data) scarcity. The hope is that resources and tools created for one language can help computation for other less resourced languages, helping requirements like automatic translation, sentiment analysis, information extraction etc. New results are appearing in NLP that show the efficacy of taking machine learning models trained on English and using them for NLP of languages like Turkish, Tamil, Amharic etc. Lexical, structural and morpho-syntactic overlap can help such "transfer" learning which is a step towards creating language agnostic NLP. In this talk, we will describe some of our work on multilingual computation, spanning many areas of NLP like translation, sentiment and emotion analysis, question answering etc. Indian languages will be kept in focus and advances in ILNLP (Indian Language NLP) will be described.

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