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Sanskrit Computational Linguistics: An Introduction

Study notes by Sanskrit AI Universe, based on this video

Video by Amba Kulkarni (University of Hyderabad) · Amba Kulkarni · 30 Jan 2023

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About these notes

— Official title: Sanskrit Computational Linguistics: An Introduction

— Speaker and channel: Amba Kulkarni (University of Hyderabad) · Amba Kulkarni

— Published 30 Jan 2023 · Running time 1 h 51 min · https://www.youtube.com/watch?v=HzM1JbnLYpA

— Official description: Talk delivered at EPHE, Paris on 31st May 2022 Abstract: Linguistique Informatique du Sanskrit (Sanskrit Computational Linguistics) La dernière tendance en linguistique informatique consiste à utiliser des approches basées sur les données (data-driven approaches) associées à des approches telles que Deep Learning ou Deep Neural Net. Le sanskrit est ici une exception. Nous trouvons rarement des approches basées sur les données (data-driven approaches) utilisées pour le sanskrit. La linguistique i

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— Caption source: English (auto-generated). Auto-captions can mis-hear words; obvious proper-name spellings were given in IAST where the journal already uses them. Distinctive phrases follow the captions closely.

From the official description

— Nous trouvons rarement des approches basées sur les données (data-driven approaches) utilisées pour le sanskrit.

— La linguistique informatique du sanskrit est toujours dominée par la forte tradition linguistique.

— Cet exposé présentera une étude de la recherche dans ce domaine.

— L'œuvre monumentale de Pāṇini, l’Aṣṭādhyāyī, présente une grammaire presque exhaustive pour le sanskrit, en grand détail, pourtant suffisamment compacte pour pouvoir le mémoriser.

— Aussi il permet des sūtras non formels ou semi- formels qui nécessitent un être humain pour les interpréter.

From the talk · 0:03–10:54

— How to get the next slide it's not moving how do we operate this okay so maybe I will use this okay so let me first talk about.

— And telephone even allowed us to have the remote access so the capabilities of ears are extended similarly telescope or microscope we have.

— That gramophones we used in gramophones we could record the sounds music but that was language independent whatever song is from whichever language gramophone worked well it.

— We need not have to tune it for our languages similarly type recorder telephone television all these we are using for communication purpose for transmitting The Voice and all.

From the talk · 10:56–22:27

— The different applications such as translation systems ocrs were developed and returns recognition systems were developed speech detectors spam detection nowadays we have all these are.

— There was some emphasis on statistical methods actually the hidden Moco model and viterbi algorithms they led to the they were used in speech recognition.

— And they found it very much successful and after that the same statistical methods were used for languages also so there were on the.

— The frequencies of the words or the collocations Etc which give us which gives us a lot of insight not from the meaning point of view.

From the talk · 22:30–33:25

— This data they have the representation of word which is let us call it as a latent space you have the actual linguistic space and.

— There are more text inverse forms than in prose but then but then you may also ask a question manuscripts are there for other languages.

— We deal with sanskritics with sanskritics computationally and the second thing is unlike other languages Sanskrit is something which is unique in the sense.

— In a book natural language processing From paninian perspective by professor sangal and Professor Vini chaitanya this showed the successful use of kāraka framework.

From the talk · 33:29–44:30

— The no other languages in the world have the give and take kind of they there is no there are no languages in the world where the theories.

— This Sanskrit computational Linguistics is somewhat different from the efforts that are going on in computational linguistics word yeah and so in the meantime some people have joined so.

— In the beginning and so now we have also some reactions I saw in the chat for instance regarding the why specifically Sanskrit computational Linguistics and I think.

— I would like to go for the various translation approaches and why this translation why a specific application I have chosen the reason behind this is recently in.

From the talk · 44:33–57:57

— And you are mislead okay yeah but this Apache the verb Apache this means it is in passive form was cooked so by Ram.

— This is the correct translation but if you look at the original sentence then there is a problem we know that it means life oh here yeah.

— In English no no I see the problem is with sharing of the subject sharing see subject sharing is possible in active not impressive.

— In of 5th Century you said right so yeah where is the sentence yeah this is this is from the this one sorry this is.

From the talk · 58:02–1:07:32

— What is going there behind the scene that is not available to us that is not known to us whereas in South sudhani I will explain.

— Those are wrong we can change the decisions and get the alternate reading also further user has access only to the final output of the of.

— And you end up going somewhere else because the road is not good some efforts are needed we say that oh road is not good fine.

— For chat for Snapchat yeah here I can see the chat okay somebody has written okay it's not quite true that there is no English competition.

From the talk · 1:07:36–1:17:35

— When you have developing a system with transfer approach essentially you are now not considering only a pair of languages of languages but.

— The syntax is different then we need to do much more analysis and that there Comes This interlinked by approach so in interlingua approach what.

— The action is also he now names so this is so how this is done because the word cow was same in the both the sentences and.

— So this is process that is being described in traditional Indian systems this is the kind of thing that is used for the parallel processing so sorry for.

From the talk · 1:17:37–1:27:45

— So in such cases then what to do so Google came up with a very I should say a very interesting idea and very path breaking idea.

— The corresponding word space Hindi words and the Hindi word space or word meaning representation and a mapping between English and Hindi also existed now.

— I don't know whether they went from Sanskrit Hindi to English or they had separate Sanskrit English I don't know but this is something which they did.

— There were some problems with two sentences but given that it is just a few days old baby a few days ago they have released this in another.

From the talk · 1:27:47–1:40:30

— There is lot of give and take among the language families we have Aryan and dravidian the dravidian and indo-aryan languages Munda languages.

— The same language family the way they divide the world into different concepts is different so in Universal networking language they.

— If it is not human understandable it is of no use but it leads to the correct translation which although it is human an understandable using.

— The VK is not looking at that is doing it in a different kind of way it's it's it's its aim is to get.

From the talk · 1:40:32–1:51:35

— Agree like yeah yes that can be done and then yes clients this is the interest of thirdly the language of styling of the text in.

— The limitations of even these are the limitations of translation I would say not machine translation these are the limitations of translation so all.

— But you can see other analysis as well yeah here it is so this was a sentence where yeah here if you see Veda vedat.

— And install it on your machine and then run it another possibility is you send the text to us and then we run it.

Sources and credit

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— Captions used: English (auto-generated) (en), retrieved on 24 November 2026 via a public Invidious instance. Auto-captions can mis-hear words; obvious proper-name spellings were given in IAST where the journal already uses them.

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