



Don Bosco Institute of Technology, Mumbai – 400070



Report on: Language Acquisition with AI Agents in Immersive Environments.

Title : Language Acquisition with AI Agents in Immersive Environments.

Date : 18th June, 2020

Time : 10.00 am – 11.00 am IST

Venue :

Zoom link:

Time: Jun 18, 2020 09:30 AM Mumbai, Kolkata, New Delhi

Join Zoom Meeting

<https://us02web.zoom.us/j/87529950694?pwd=YWQ0c0JwalBZZTd2Z2QrRXpOS1Z5dz09>

Meeting ID: 875 2995 0694

Password: 701249

YouTube link:

<https://youtu.be/-eSouiTwLT8>

Participants : 16 Zoom Participants, 211 YouTube views

Resource Person : Dr. Rahul Divekar

Organizing Department / Committee / Authority : ACM Student Chapter & Department of Computer Engineering, DBIT

Objective :

1. To understand the Engagement with a real-world environment with the help of AI agents using language acquisition in immersive environments.
2. To know how language acquisition is achieved in an immersive environment.

Outcome:

1. Understanding the various challenges an AI agent has to overcome in order to augment foreign language acquisition.
2. Understanding the difficulties and their solutions while engaging in the real-world with help of AI agents.

Excerpt : Considering the highly demanding need of AI agents, a technical webinar was organized covering how the AI agents can be used for language acquisition in immersive environments.

Report :

AI agents are meant to be more human-like, in a way which can help supplement humans by giving an experience of a real-world scenario. There are already existent chat-bots with which we can converse, but a real conversation could be very different from what we have with chatbots like SIRI, ALEXA, etc.

Beginning with the main research challenge, it was to augment learning of Chinese as a foreign language and culture.

So here we are looking to make the conversation seem very real, so AI has to come up with understanding multi-modal inputs, multi-user inputs, generating relevant outputs at the relevant time, which together is called conversational artificial intelligence (CAI).

The AI agent has to understand clearly the meaning of the context (resolving abstractness), understand multi-user dynamics that is identifying who said what to whom, adapting to behavioural patterns, computing outputs that is when to respond and how to respond using audio or video context. Another task that needs to be taken care of is, when should the AI agent respond in a multi-user environment, all these things have to be taken care of, so that the conversation would seem more real, as if conversing with a real human for instance ordering Chinese food at a restaurant, so the AI agent will not only help you order your food but will also help you correct your Chinese language accent.

The main goal was to build interpersonal conversation skills using AI through immersion. In this case it was learning Chinese as a language to help users learn and communicate in that language.

In this there were various problems to be solved:

- (a) To help students practice a language (in this case Chinese), which requires getting input from a knowledge resource and also being able to feed in output that the user has, so that an interactive session can take place, but in cases of using online material the user can only take input.
- (b) Another way is to enrol for a class, but while learning the language a person's evaluation is based only on his/her peers or seniors, so outside that no one can evaluate you, so there are still chances of not having a perfect evaluation.
- (c) Also, a person could actually get physical and social exposure by visiting a place (in this case China), but this might not be possible for everyone.

So, in a way to overcome such problems AI agents with language acquisition skills were looked upon.

A language immersion program can be divided into two parts:

- (a) Physical / Visual immersion – Extended reality (X-reality)
- (b) Social immersion – Conversational AI

Both of these together can give us an exposure of authentic conversation opportunities which leads to foreign language acquisition.

To conclude we can say that foreign language acquisition using AI agents in immersive environments is very different from actually conversing with simple chat-bots, as these agents have to provide a human like experience to the user and identify when a user is expecting an answer from an AI agent, which can be done by identifying direction in which the user is looking while asking a question, but there are still drawbacks that still need to be solved for instance if the persons face is covered partly due to some reasons the AI agent wont be able to identify the user, so these problems still need to be worked upon.

Rahul Divekar recently graduated with a PhD in Computer Science from Rensselaer Polytechnic Institute. He is advised by Dr. Hui Su and Prof. James Hendler.

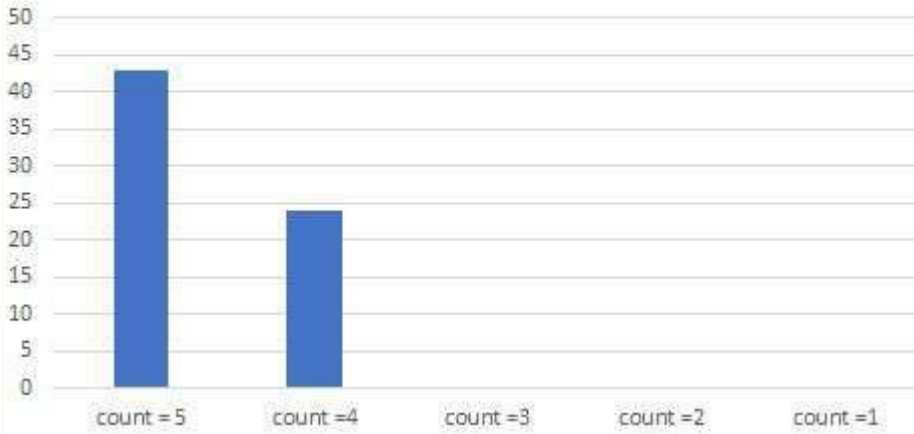
Rahul's dissertation showed a new way to learn a foreign language with AI and marker-less Immersion. He has authored several peer-reviewed papers related to his work and his work has been covered by popular media outlets such as MIT Technology Review Magazine, Indian Express, The New York Times, etc. His work won the outstanding poster award at the AI Horizons Colloquium by IBM Research AI and an award at 3-Minute Thesis competition at Rensselaer.

During his time at Rensselaer, he has served as a Teaching and Research Assistant, guest editor of ACM XRDS Magazine, Associate Chair for ACM CHI Conferences and continues to contribute to his research community. He has collaborated and worked with experts from IBM Research, Amazon, Salesforce etc. and with universities around the world. He is eager to join Educational Testing Service (ETS) as an Associate Research Scientist in August.

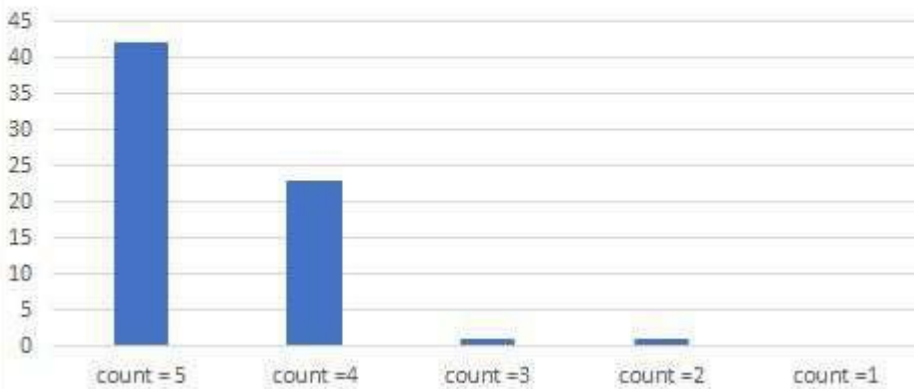
Most importantly, he is an alumnus of Don Bosco Institute of Technology and the ACM Student chapter at DBIT. He graduated in 2015 before he went to Rensselaer to pursue his Masters and PhD.

Feedback Analysis:

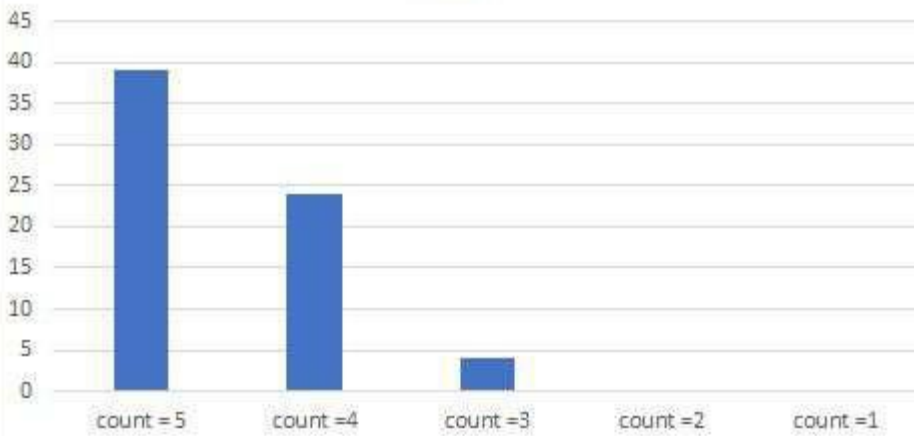
The webinar gave good insights about Language acquisition?



The speaker was able to deliver appropriate information about the opportunities and challenges of the future?

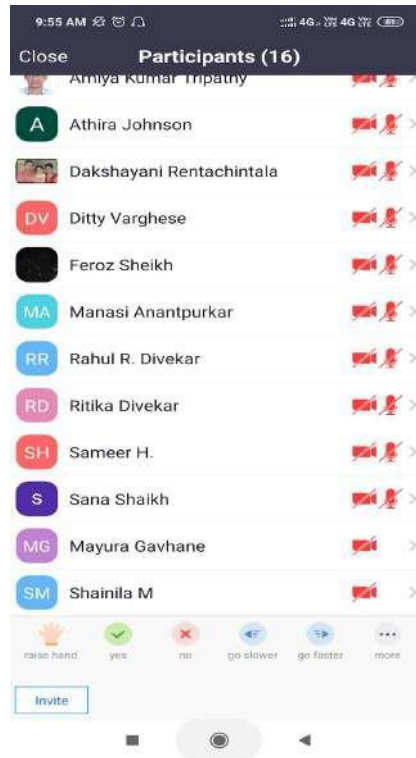
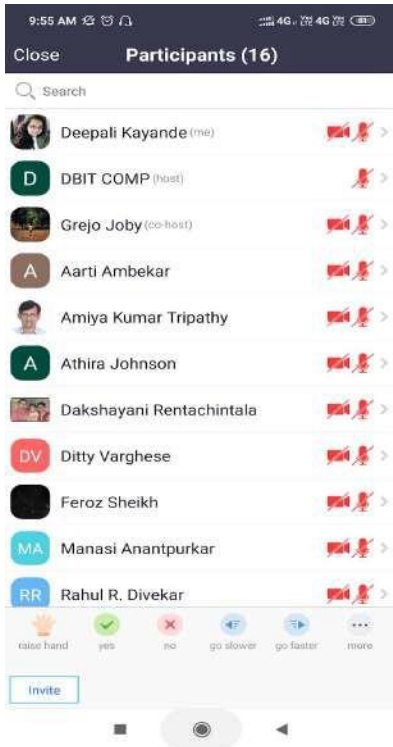


Was the session thought provoking and engaging?





Pictures:



Registration Details:

Name of Participant	Name of Institute/ College	Department	If you are not a student, select the option below	Will you be attending?	Suggestions/ Comments
Hayden Cordeiro	Don Bosco Institute of technology	Computer	Alumnus	Yes	

Kaushik Shettigar	Don Bosco Institute of Technology	Mechanical		Yes	
Jitesh Zade	S. B. Jain Institute of Technology, Management & Research, Nagpur	Information Technology	Faculty	Yes	
Nasim Banu Anwar Ali Shah	KJSIEIT	Information Technology	Faculty	Yes	Eagerly waiting for the event
Shawn Louis	Don Bosco Institute of Technology	Computer		Yes	
Nikita Dsouza	Don bosco institute of technology	Computer		Yes	
Soham Shinde	DBIT	Computer	Guest	Yes	
Siddhant Rajee	Don Bosco Institute of Technology	Computer		Yes	
Rutuja Bhate	Don Bosco Institute Of Technology	Computer		Yes	
Deepankar Gupta	Don Bosco Institute of Technology	Computer		Yes	Na
WAGHMAR E ANKUSH VASUDEV	Pacific school of engineering	Other		Yes	Good
Briana Rajan	Don Bosco Institute of Technology	Computer		Yes	
Suman semalty	Don Bosco institute of technology	Computer	Alumnus	Yes	
Jivin Varghese	Don Bosco Institute of Technology	Computer		Yes	
Nicole Mathias	Don Bosco	Computer		Yes	
Nikhat Fatma Mumtaz Husain Shaikh	Anjuman-I-Islam's Kalsekar Technical Campus, School of Engineering and Technology ,New Panvel	Computer	Faculty	Yes	Attending
Dakshayani	Fr.C.Rodrigues Institute of Technology	Computer	Faculty	Yes	
Anagha Durugkar	Thadomal shahani Engineering college	Computer	Faculty	Yes	
Anita Dayanand Mhatre	Datta Meghe College Of Engineering	Information Technology	Faculty	Yes	No
Dr. Ujwala Bharambe	Thadomal shahani engineering college	Computer	Faculty	Yes	
Vijaya Padmadas	Thadomal shahani engg college	Computer	Faculty	Yes	
Xytus Vazacholil	Don Bosco Institute Of Technology	Computer		Yes	
Smruti Patil	Pvppcoe	Information Technology	Faculty	Yes	
Prajna Nayak	Don Bosco	Computer		Yes	
Abhijeet Ringe	Don Bosco institute of technology	Information Technology	Guest	Yes	
Sneha Satish	Don Bosco Institute of Technology	Computer		Yes	
Agnas Vidya Michael	Pillai college of Arts Commerce and Science (Autonomous)	Computer	Faculty	Yes	
Aarti G.Ambekar	D.J. Snaghvi College of Engineering	Electronics and Telecommunication	Faculty	Yes	Na

Venkata A P Chavali	D J Sanghvi College of Engineering	Electronics and Telecommunication	Faculty	Yes	
Tushar Tripathi	Don Bosco Institute of Technology	Computer		Yes	
Jovita Dominic Mathias	DBIT	Computer	Alumnus	Yes	
Saloni Dhotre	Don Bosco Institute of Technology	Computer		Yes	
Denzita Dsouza	Don Bosco institute of technology	Computer		Yes	
Om Rajurkar	Don Bosco Institute of Technology	Computer		Yes	
Chris	Don Bosco	Computer	Guest	Yes	
Kalpita Ajinkya Wagaskar	Don Bosco Institute of Technology	Computer	Faculty	Yes	
Reena Kale	Don Bosco institute of technology	Computer		Yes	
Denvin Davis	Don Bosco Institue Of Technology	Computer		Yes	
WAGHMAR E ANKUSH VASUDEV	Pacific school of engineering Surat	Other		Yes	Good
Harshada Patil	Don bosco institute of technology	Computer		Yes	
Russel Abreo	Don Bosco Institute of Technology	Computer	Guest	Yes	
Dipti Jadhav	DBIT	Computer	Faculty	No	
Sana Shaikh	Don Bosco Institute of technology	Computer	Faculty	Yes	
Sumit Vishwakarma	Don Bosco Institute of technology	Computer		Yes	No
Mayura Gavhane	DBIT	Computer	Faculty	Yes	
Prajna Nayak	Don Bosco	Computer		Yes	
Nevil Dsouza	DBIT	Computer		Yes	
Pradnya	DBIT	Computer		Yes	
KARAN DOSHI	Don Bosco Institute of technology	Computer		Yes	
Hariharan Iyer	Don Bosco Institute of Technology	Computer		Yes	
Pakshal Ranawat	DBIT	Computer		Yes	-
Chryselle Fernandes	Don Bosco Institute of Technology	Computer		Yes	
Sumit Vishwakarma	Don Bosco Institute of technology	Computer		Yes	No
Mangan Alvina Joy	Don Bosco Institute of Technology	Computer		Yes	
Slade Ferrao	DBIT	Computer		Yes	

Rutuja Bhate	Don Bosco Institute of technology	Computer		Yes	
Sangeeta Kaswan	Don Bosco institute of technology	Computer		Yes	
JOBINSI PRINCE	Don Bosco Institute Of Technology	Computer		Yes	
Grejo Joby	Don Bosco Institute of Technology Mumbai	Computer		Yes	
Kevin Johnson	Don Bosco Institute of Technology	Computer		Yes	
Denzita Dsouza	Don Bosco institute of technology	Computer		Yes	
Shawn Louis	Don Bosco Institute of Technology	Computer		Yes	
Snehal Jotiba Chougule	Don bosco	Computer		Yes	
Hayden Cordeiro	Dbit	Computer	Alumnus	Yes	
Priyal Vaz	Don Bosco Institute Of Technology	Computer		Yes	
Riya Mekkattukulam	Don Bosco institute of technology	Computer		Yes	
Aamod Sawant	Don Bosco institute of technology	Computer		Yes	
Jason	Dbit	Computer		Yes	
Anuja Vaidya	DBIT	Computer		Yes	
Reena Kale	Don Bosco institute of technology	Computer		Yes	
Anuja Vaidya	DBIT	Computer		Yes	
Piyush Sonar	DBIT	Computer		Yes	
KARAN DOSHI	Don Bosco Institute of technology	Computer		Yes	
Athira Lonappan	DBIT	Computer		Yes	
Shainila M	DBIT	Computer	Faculty	Yes	
KARAN DOSHI	DON BOSCO INSTITUTE OF TECHNOLOGY	Computer		Yes	
Amiya Kumar Tripathy	DBIT	Computer	Faculty	Yes	
Dr. Shaikh Phiroj	Don Bosco Institute of Technology	Computer	Faculty	Yes	
Kalpita Ajinkya Wagaskar	Don Bosco Institute of Technology	Computer	Faculty	Yes	
Sejal Mahavir Chopra	Don Bosco Institute of technology	Computer	Faculty	Yes	
Prajna Nayak	Don Bosco Institute of Technology Mumbai	Computer		Yes	
Anish Nair	Dbit	Computer		Yes	
Lav Sharma	DBIT	Computer		Yes	
Lav Sharma	DBIT	Computer		Yes	

Ritika Divekar	-	Other	Guest	Yes	
Aditi Subhash	SIES COLLEGE OF ARTS SCIENCE AND COMMERCE	Other	Guest	Yes	
Agnel	DBIT	Computer		Yes	N.A
Ditty Varghese	Don Bosco Institute of Technology	Computer	Faculty	Yes	
Adonia Sequeira	DBIT	Computer		Yes	
Anuj panchal	Don Bosco Institute of Technology	Computer		Yes	
Manasi Anantpurkar	Dbit	Computer		Yes	
Aditi Subhash	SIES	Other	Guest	Yes	
Reuben Crasto	DBIT	Computer		Yes	
Ruchita Singh	DBIT	Computer		Yes	
Sonia Rodrigues	Don Bosco Institute of technology	Computer		Yes	
Nigel Crasto	Don Bosco Institute of technology	Computer		Yes	No suggestions
Lourd Bharathy Arokiadass	Don Bosco Institute of Technology	Computer		Yes	
Sameer Joshi	DBIT	Computer		Yes	
Samarth Khaire	DBIT	Computer		Yes	

Report Prepared By : Ms. Deepali Kayande

Report Approved By: Ms. Sana Shaikh