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Committee of Management 2024-2025

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Vice-Chairman

Gulab Chandra
Hon. Secratary

Dr. Puneet Misra
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Dr. Pawan Chaurasia
Member

Dr. Devesh Katiyar
Member

Members - Nomination Committee

R A S Tyagi

Shekhar Agarwal

Anil K Srivastava

Message from Hon. Secretary

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Dear Friends,

The fourth quarter of the period from April 2023 to March 2024 is over. In this quarter, CSI, Lucknow Chapter organized three big events, namely, the 36th Annual General Meeting, Two Days Workshop on "Highlighting the significance and features of Jan parichay (Meri Pehchaan)" with National Informatics Centre (NIC), where in the Computer Society of India, Lucknow Chapter was the Knowledge Partner and finally the most critical event, that is "the Elections" for constituting new Management Committee for the period from April 2024 to March 2025. All events were applauded by the CSI members.

CSI, Lucknow Chapter has been publishing this newsletter perpetually and this could become possible only with your contribution, support and guidance. This is the last edition of the newsletter "TechWings@CsiLko" in your hand in my editorship as my tenure is coming to an end. I take this privilege to pass- on a big "THANKS" to all of you. My great appreciation is due to the editorial team for their help and mentoring.

Now, a new editorial team will take charge. I assure that you will continue to get the newsletter, but in a new format and Caliber.

The new Management Committee has been constituted. My heart-felt best wishes to every member of the new Management Committee for their future endeavours.

With love and Regards

(Dr. Shyam Kumar Garg)
Hon. Secretary,
CSI, Lucknow Chapter

36th Annual General Meeting (AGM) of Computer Society of India, Lucknow Chapter

The 36th Annual General Meeting of Computer Society of India, Lucknow Chapter was held at Hotel Golden Orchid, Nirala Nagar, Lucknow on 6th March, 2024.

In the beginning of the AGM, Dr. Shyam Kumar Garg, Hon. Secretary invited Sh. Deepak Sharma, Chairman, Sh. Vinay Kumar Johri, Vice Chairman-cum- Chairman Elect, Dr. Puneet Misra, Hon. Treasurer and Sh. Anil Kumar Srivastava, Immediate Past Chairman on the dais.

The meeting commenced as per the agenda. Sh. Deepak Sharma greeted and welcomed the CSI members present in the meeting. He advised the House that 6th March is the CSI Foundation Day and all members greeted each other and wished long live CSI. The minutes of 35th AGM were read out by Dr. Shyam K. Garg, Hon. Secretary for approval by the House. The proposal for approval of minutes was moved by Sh. R.A.S. Tyagi and was seconded by Sh. Arvind Sharma and Sh. Gulab Chandra and finally approved by the House.

Sh. Deepak Sharma, Chairman presented the activities-report and explained various activities performed during the period from April 2023 to February, 2024. The accounts for the Financial Year 2022-2023 were presented by Dr. Puneet Misra, Hon. Treasurer, CSI Lucknow Chapter. After presenting the key financial information related to expenditure and income for the financial year 2022-23, The House took the note of financial parameters. The proposal to approve the Expenditures was moved by Sh. Vinay Kumar Garg and seconded by Sh. Arvind Sharma and was finally approved by the House. The Road Map of activities for the period from April 2024 to March 2025 was presented by Sh. Vinay Kumar Johri, Vice Chairman- cum- Chairman (elect).

At end of the AGM, Dr. Shyam Kumar Garg, extended thanks to the Chairman and the members of Management Committee and acknowledged their contribution in the activities of the Chapter. He also extended thanks and gratitude to the senior CSI members and fellow members for their support for organizing the events successfully.

The AGM was concluded followed by dinner.

Some Glimpses of the Event :

Some Glimpses of the Event :

JanParichay… MeriPechaan

A user requires to have multiple passwords for different applications that they own. Or at times users use the same password for all applications that they own. In some cases, they write the password and paste it on their computers or laptop. In some cases, they email the passwords to themselves. All these are very risky approach. In case of single sign –on (SSO) the user remembers only one password for the applications that they access. This reduces the Attack Server to a single system. The SSO manager is secured by Multi Factor Authentication (MFA) process. Thus, the SSO acts as a Secured gateway to the applications that the user access.

Use of SSO will help to improve the Security for the users. It leads to Savings for organizations as the probability to forget passwords reduces. This also reduces the load for the helpdesk of an organization. As majority of the job of the helpdesk is to attain to the request by the users to reset their passwords. This also enhances the experience for the users.

For the purpose of SSO Open Authorization (OAuth) 2.0 is used to allow a website or application to access resources hosted by other web apps on behalf of a user. Similarly, Security Assertion Markup Language (SAML) is also used as standardized way to tell external applications and services that a user is who is trying to access it is the authenticate one. SAML makes single sign-on (SSO) technology possible by providing a way to authenticate a user once and then communicate that authentication to multiple applications.

Janparichay is a centralized session and user authentication service that will help a citizen to use one set of login credentials to access multiple applications. The service authenticates user once on one designated platform, enabling the user to use a plethora of services without having to log in and logout each time. The main purpose of the application is to create a single sign-on (SSO) framework for various Government services. This provides an added layer of security in terms of strong authentication mechanism for Government services. Interestingly JanParichay works as e-Authentication as a service (e-AaaS) to government departments for providing a secure and convenient way for users to access government services. While for the government departments to assess the authenticity of the users. This SSO process will help authentication and for easy onboarding and authentication of users. SSO will use multiple backend verification parameters including Aadhaar Card, Pan Card, Driving License, Application dependent Id and others. JanParichay will Offer Real-time analytics capabilities for government agencies. With this data it will be possible to identify a user session activity. This will help in reducing potential profile hacks.

Some Glimpses of the Event :

Election Slate of CSI Lucknow Chapter for 2024-25

As per the Section-5 (Nominations and Elections) of Constitution and Byelaws of Computer Society of India, three persons' Nomination Committee viz. Mr Harish Chandra Gupta, Mr Nafisul Hasan Kidwai and Dr Amitabha Yadav invited proposals/nominations for the Chapter Elections on 9th of Feb, 2024 for 01 post of Vice-Chairman cum Chairman Elect, 01 post of Hon. Secretary, 04 posts of Member - Managing Committee and 03 posts of Member - Nomination Committee. The last date for receipt of Nominations was 26th of Feb, 2024 and the last date for withdrawal of Nominations was 28th of Feb, 2024.

A joint meeting of Management Committee and Nomination Committee was held on 6th of March, 20924 at 5:50 pm. Sri Harish Chandra Gupta, Chairman, Nomination Committee tabled the slate of candidates who submitted their nominations for the Chapter MC and NC.

Two proposals were received for the post of Vice-Chairman cum Chairman Elect, therefore there was the requirement of election for this post. The two proposals were of Prof. Arunabha Mukhopadhyay and Dr. Shyam Kumar Garg. The number of nominations received for the other posts were not exceeding the number of respective posts, therefore elections were not required for those posts.

On 31st of March, 2024, the voting process for the post of Vice Chairman cum Chairman Elect was conducted from 11:00 am to 1:00 pm at CSI, Lucknow Chapter's office at Tej Kumar Plaza, Hazratganj, Lucknow.

The process was initiated at 11:00 am in presence of both the contestants after completing preliminary formalities. At 1:00 pm, after the voting time was over, the ballot box was opened in front of both the contestants, votes were counted and the result was declared. Dr. Arunabha Mukhopadhyay was declared the winner for the post of Vice Chairman cum Chairman Elect.

In another development, it was realized that Shri Ravindra Singh (Membership No. I0019546) although is a Life Member of CSI and was attached to Lucknow Chapter earlier, but currently he is attached to Allahabad Chapter. Therefore, he was not eligible to become the MC Member at Lucknow Chapter. The situation was explained to him and he was requested to get his Chapter Association changed to Lucknow. His nomination for this year was not considered. As there was a vacancy, the name of Dr. Devesh Katiyar (Membership No. I1505526) was proposed and was approved in the meeting of MC and NC.

Thus, the final slate of Management Committee and Nomination Committee was declared

Sr.	Post	Name of Candidate	Address	Membership No.
1	Chairman	Mr. Vinay Kumar Johri	4/425, Vivek Khand, Gomti Nagar, Lucknow – 226010 M: 8795824318 E: vinay090413@gmail.com	I0002604
2	Vice-Chairman cum Chairman Elect	Prof. Arunabha Mukhopadhyay	H.No. 548, IIM, Lucknow - 226013 M: 9936244263 E: arunabha@iiml.ac.in	I0154787
3	Hon. Secretary	Mr. Gulab Chandra	18/423, Sector-18, Indira Nagar, Lucknow – 226016 E: g1u2l3a4b5@yahoo.co.in M: 9451451588	I0007986
4	Hon. Treasurer	Dr. Puneet Misra	L-VI M/129, Sector-M, Aliganj, Lucknow – 226021 M: 9415159146 E: puneetmisra@gmail.com	I1175998

5	Immediate Past Chairman	Mr. Deepak Sharma	D-21, Nirala Nagar, L.P. Marg, Lucknow – 226007 M: 9795121212 E: deepak.sharma@nic.in	I0011371
6	Member – Management Committee	Mr. Satyendra Kumar Gupta	MIG-1, Shekhupura, Kursi Road, Aliganj, Lucknow – 226022 E: rsmultimediauk@yahoo.com M: 9984416555	I0019983
		Mr. Kamal Kumar	4/57, Vijayant Khand, Gomti Nagar, Lucknow – 226010 E: kamalkumar@gmail.com M: 9435215406	I1500786
		Dr. Pawan Kumar Chaurasia	Associate Professor, Department of IT, BBAU, Lucknow E: pkc.gkp@gmail.com M: 9451393566	I0151040
		Dr. Devesh Katiyar	258, Chandralok Colony, Aliganj, Lucknow – 226024 M: 9335040700 E: katiyardevesh@gmail.com	I1505526
7	Member – Nomination Committee	Mr. RAS Tyagi	B-305, Sterling Apartment, Lucknow – 226007 E: tyagiras45@gmail.com M: 7905583956	I0122754
		Mr. Anil Kumar Srivastava	11/133, Vikas Nagar, Lucknow – 226022 E: anilsrv17@gmail.com M: 9415463224	I0014662
		Mr. Shekhar Agarwal	A-401, Indira Nagar, Lucknow – 226016 E: shekharagrawallko2018@gmail.com M: 9453129861	I0001108

The elections were conducted as defined by the CSI Constitution and Byelaws (5.1) and CSI National Nomination Committee and handed over the above-mentioned results to the Chairman for onward communication and approval of the Managing Committee of the Chapter.

The Managing Committee of CSI Lucknow Chapter approved/vetted the above election slate/result in its meeting held on dated 31.03.2024.






Digidhan Mitra Chatbot: Bridging the Gap to Digital Financial Services

- By ABHISHI GUPTA
(B.Tech – CSE - AIML 1ST Year), SRMCEM. Lucknow

INTRODUCTION

The Digidhan Mitra Chatbot is a key player in India's digital financial revolution, offering an innovative solution to improve access and inclusivity in the nation's financial sector! As a part of the ambitious Digital India project, this virtual assistant guides users through digital payment processes and promotes financial literacy. With its easy-to-use interface and 24/7 availability, the Digidhan Mitra Chatbot caters to people from various backgrounds, including those in rural areas with limited access to traditional banking. By simplifying digital transactions and providing personalized support, it empowers users to adopt cashless payment methods confidently. In addition, the Chatbot also ensures dibility and security for all users using cutting-edge technology!

Chronicle of Digidhan Mitra Chatbot

The development was part of the DigiDhan campaign, an initiative launched by the Government of India to promote digital transactions and reduce reliance on cash. The chatbot was developed in collaboration with various technology partners and experts in artificial intelligence and chatbot development. Its development likely involved a combination of programming languages, natural language processing algorithms, also machine learning techniques did to enable it to understand user queries and provide relevant information and assistance regarding digital transactions and financial services. The exact date of its development may not be publicly available, but it introduced to the public as part of the DigiDhan campaign, which gained momentum in late 2016 and early 2017.

- The chatbot was developed in collaboration with various technology partners, experts in artificial intelligence, and chatbot development.
- The exact date of its development might not be publicly available, but it was introduced to the public as part of the DigiDhan campaign in late 2016 and early 2017.

Technological Foundations

The Digidhan Mitra Chatbot probably utilizes a combination of various technologies to function somewhat effectively. These may include:

1. Natural Language Processing (NLP):

NLP allows the chatbot to supposedly understand and interpret user queries in a natural language, potentially enabling more human-like interactions and such.

2.Machine Learning (ML):

ML algorithms help -or not- the chatbot learn *from* user interactions over time, theoretically improving its ability to potentially provide somewhat accurate responses and recommendations...maybe.

3. Artificial Intelligence (AI):

AI techniques are perhaps employed to enhance the chatbot's supposed ability to process and kind of analyze large amounts of data, enabling it to potentially generate semi-intelligent responses and adapt -or maybe not- to user needs or wants.

4. Chatbot Frameworks:

The chatbot may somehow be built using frameworks like Dialogflow, Microsoft Bot Framework, or some custom-built frameworks tailored to the hypothetical requirements of the Digidhan Mitra Chatbot, without a doubt.

5. Integration with APIs:

The chatbot apparently integrates with -or supposedly not- various APIs (Application Programming Interfaces) to supposedly access data and services related somewhat to digital transactions, banking, and somewhat financial services, I guess.

The Catalytic Role

1. Pradhan Mantri Jan Dhan Yojana (PMJDY):

The chatbot assists in promoting the PMJDY; which aims to provide financial access to unbanked and underbanked individuals. It educates citizens about the benefits of opening a Jan Dhan account, facilitates the account opening process; and provides information on how to avail of associated benefits such as overdraft facilities and insurance coverage.

2. Digital Payments Initiatives:

The chatbot supports government initiatives aimed at promoting digital payments. such as, the Digital India campaign and the BHIM (Bharat Interface for Money) app. It educates users about various digital payment methods; including UPI (Unified Payments Interface) mobile wallets, and online banking, and provides assistance in conducting digital transactions securely.

3. Financial Literacy Programs:

The chatbot contributes to financial literacy programs by providing users with information and guidance on various financial topics, such as budgeting, saving, investing, and managing debt. It helps improve citizens' understanding of financial concepts and empowers them to make informed decisions about their finances.

4. Government Subsidy Disbursement:

The chatbot facilitates the disbursement of government subsidies; and benefits to eligible beneficiaries by providing information on subsidy schemes, eligibility criteria, and application procedures. It assists users in accessing subsidies digitally; thereby reducing leakages and ensuring that benefits reach the intended recipients efficiently.

5. COVID-19 Relief Measures:

During the COVID-19 pandemic; the chatbot played a crucial role in disseminating information about government relief measures. such as, direct cash transfers, food distribution programs, and financial assistance schemes for small businesses and vulnerable groups. It helped citizens access financial support and services remotely; minimizing the need for physical interactions and reducing the risk of virus transmission.

Conclusion

Overall, the future of the Digidhan Mitra Chatbot is likely to be characterized by continued innovation, expansion of services, and a deeper integration with emerging technologies! By leveraging these advancements, the chatbot will play an increasingly important role in driving financial inclusion, promoting digital literacy, and enhancing citizen engagement in India's digital economy. Additionally, with advanced algorithms and machine learning, the chatbot aims to provide personalized solutions for users, thus further increasing its impact in the digital sphere. In conclusion, the potential for growth and development in the realm of chatbots such as Digidhan Mitra is vast, highlighting a bright future ahead for these digital companions.

Speaker Diarization: Applications and Challenges

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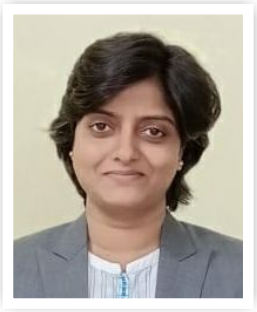
Abstract



Speaker diarization is a method to identify "who spoke when" from multi speakers audio recordings. or we can say that it is the process of categorizing audio or video recordings according to the individual speaker's identity. The term diarize indicates to recording voice/speech or writing something somewhere which further can be used for identification purpose. Nowadays lots of research work is going on in speaker diarization and it is a crucial subject matter in the area of speech processing. The process involved in this is to break up an audio recording of speakers into similar parts and splitting audio segments related to individual speaker. Recent advances in deep learning technology have allowed for quick advancements in speaker diarization as a result of the revolutionary changes they have brought about in speech applications research and practices along with the historical development of speaker diarization technology. I-vector is one of the methods by using that significant results obtained as well deep learning methods are good to make improvement in accuracy in speech processing area. Research in the area of speaker diarization was recognized more in last few years, the approach behind it to identify individual identity from multi speakers' recordings or audio files.

The purpose of speaker diarization is to segments an audio recording into temporal segments which contains utterance boundaries of each speaker's voice i.e. "who spoke when". It is a significant research field in speech processing area. Uses of speaker diarization includes audio analysis, automatic speech recognition, real-time captioning, speaker indexing etc.it is very challenging task because of involvement of many speakers in speech and also speech overlapping is there [1-3]. And it is more challenging due to involvement of background noise, duration when speakers speak, and naturalness of speech. Speaker diarization generally categorize in to two clustering based diarization system and end-to-end methods diarization system [4].

Speaker diarization is also termed Speaker segmentation and clustering. It is the task to identify "who spoke when" i.e. identification of the speaker from audio recordings. In other words, we can say that Speaker diarization is an application of speaker identification. Speaker diarization is a way of splitting speech conversations into small segments of recordings to identify individual speakers from an audio file [5-6]. It is a crucial factor for the various problems in recording interpersonal discussions, meeting recordings etc. In this decision, based on speech vs. non speech identification i.e. to detect who speaks when [7-8].

Continuous progress in internet and storage capacity have impact on audio recordings as well. Nowadays audio data available can be recorded from meeting, voice mails, broadcasts etc. [4]. In order to allow speaker adaptive processing for speech recognition on multi-speaker audio recordings, speaker diarization algorithms were originally developed [9]. These algorithms have been more and more effective at supplying speaker-specific metadata for subsequent tasks like audio retrieval. Recent advances in deep learning technology have allowed for quick advancements in speaker diarization as a result of the revolutionary variations that have been conveyed in speech application sectors' research and practices. Along with the historical development of speaker diarization technology, there is new developments in neural network-based speaker technology [10-11].

Speaker diarization is a way of splitting apart taped conversations in order to identify various speakers and enable organizations to construct speech analytics tools. The stream of the discussion can be more easily followed by AI and people reading a transcript if such an audio stream is segmented into segments that match the different speakers in a conversation [11-12].

• Speaker recognition: Also known as speaker segmentation. To determine who talks when, this approach examines the features of each voice and the zero-crossing rate. Pitch, for example, is utilized to identify and frequently disclose the gender of each speaker.

• Audio Embedding: I-vectors, speaker factors, or other specialized characteristics are recovered from the segmented sections through the process of audio embedding extraction.

• Speaker clustering: As the speakers are identified, they are separated into segments with just speech remaining so that the full discussion may be appropriately labelled and readily understood. To determine the number of participants in the chat, this technique takes either a deterministic or probabilistic approach.

• Re-segmentation: In this the final diarization outcomes are generated by further optimizing the clustering results.

Continuous speech separation is used to speaker segmentation. One can define continuous speech separation as the methodology to obtaining a group of overlap free audio signals from an ongoing audio recording flow which consists of various statements produced by multiple speakers speaking for hours and having both the overlapping and non-overlapping parts [11-12].

Keywords- Speaker Diarization, Applications, Challenges.

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