



TECHTALK: MOBILE APPLICATION FOR SHARING IDEAS AND DISCUSSING TECHNOLOGICAL NEWS

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Abstract - Tech Talk is a mobile application designed to create a dedicated platform that connects students, Special Lab members, and industry partners, fostering real-time communication, collaboration, and knowledge sharing. The app aims to drive innovation and keep stakeholders updated on the latest technological advancements, enabling a seamless flow of ideas and expertise across academia and industry. The application offers dedicated spaces for focused discussions on a wide range of topics, including cutting-edge technologies, innovation, and industry trends. It provides users with a platform to ask questions, receive expert insights, and share knowledge, building a robust ecosystem for continuous learning and problem-solving. Curated content, featuring the latest industry news, research findings, and upcoming events, ensures users stay informed with timely and reliable information. Tech Talk also creates a collaborative environment where users can brainstorm, share innovative ideas, and co-develop solutions to pressing industry challenges. Enhanced with advanced natural language processing (NLP) algorithms, the app automatically summarizes lengthy articles, research papers, and discussions. This feature makes complex information easily accessible and actionable, saving users valuable time while ensuring comprehension. The app goes beyond being a mere communication tool by bridging the gap between academia and industry, fostering a culture of innovation and collaboration. By empowering diverse groups to exchange ideas, contribute expertise, and work collectively, Tech Talk positions itself as a hub for technological advancement and problem-solving. Tech Talk is not just a mobile application. It is a vital tool for shaping the future of technology, connecting people, and enabling breakthroughs in innovation.

Key Words: Real-Time Communication, Collaboration, Knowledge Sharing, Natural Language Processing, Academia-Industry Interaction, Innovation, Mobile Application Development.

1. INTRODUCTION

The rapid advancement of technology has created an urgent need for effective collaboration between academic institutions and the industry. Bridging this gap is essential for driving innovation, enhancing knowledge sharing, and

preparing students for real-world challenges. While existing platforms like Slack, Microsoft Teams, and ResearchGate offer some degree of collaboration, they often fall short in specific areas, such as real-time interaction, customization for specialized needs, and integration of cutting-edge technologies like Natural Language Processing (NLP).

Tech Talk is conceived as a solution to these challenges, providing a dedicated platform specifically designed to enable real-time collaboration among students, professionals, and industry partners. This paper outlines the development process, features, functionalities, and expected impact of Tech Talk on academia and industry relations.

1.1 Background Work

The integration of technology in academia and industry has led to significant advancements in knowledge sharing, research collaboration, and innovation. Various platforms and forums exist to facilitate communication among researchers, students, and industry professionals. However, these platforms often lack a structured environment for real-time interaction, making it challenging to engage in meaningful discussions and knowledge transfer.

Previous studies highlight the importance of academia-industry collaboration in driving technological advancements. Research platforms such as ResearchGate and academic journals provide access to scholarly articles, while industry-oriented forums like LinkedIn enable networking. However, these platforms primarily serve as repositories of information rather than interactive spaces for direct engagement.

Moreover, the rapid growth of information in the technology sector makes it difficult for individuals to stay updated with the latest research findings and industry trends. While some tools offer automated summaries, they often lack context-specific insights tailored to users' needs. Therefore, there is a need for an interactive, real-time communication platform that integrates discussion forums, expert insights, curated content, and intelligent summarization tools to enhance accessibility and collaboration between academia and industry.



1.2 Problem Statement

Despite the increasing need for seamless knowledge sharing and collaboration between academia and industry, existing platforms are either too static, lack real-time interaction, or do not integrate advanced tools to simplify complex information. Traditional academic forums and industry networks do not provide structured, topic-based discussions where users can ask questions, brainstorm solutions, and share expertise in a collaborative manner.

Additionally, the overwhelming amount of research papers, articles, and technological advancements makes it difficult for users to extract relevant insights efficiently. Existing summarization tools lack industry-specific customization, making it challenging to distill critical information effectively.

To address these challenges, Tech Talk is designed as a dedicated mobile application that fosters real-time communication, collaboration, and knowledge sharing between students, researchers, and industry professionals. By integrating natural language processing (NLP) for automated summarization and providing topic-driven discussion spaces, the platform aims to create a dynamic ecosystem for innovation and problem-solving.

1.3 Objective of the Project

The primary objective of Tech Talk is to develop a dedicated mobile application that fosters real-time communication, collaboration, and knowledge sharing among students, Special Lab members, and industry professionals. The platform aims to bridge the gap between academia and industry by providing structured discussion spaces, expert insights, and curated content to enhance learning and innovation.

The specific objectives of the project are:

1. **Facilitate Real-Time Interaction:** Provide a platform for seamless discussions on cutting-edge technologies, industry trends, and research innovations.
2. **Enhance Knowledge Sharing:** Enable users to ask questions, exchange ideas, and receive expert insights in a collaborative environment.
3. **Integrate NLP-Based Summarization:** Implement advanced natural language processing (NLP) algorithms to summarize lengthy articles, research papers, and discussions, making complex information more accessible.
4. **Curate Industry-Specific Content:** Deliver timely updates on research findings, industry news, and upcoming events to keep users informed.
5. **Promote Industry-Academia Collaboration:** Bridge the gap between academic research and industry needs by facilitating knowledge transfer and joint problem-solving initiatives.
6. **Encourage Innovation and Brainstorming:** Provide a space where users can collaborate on ideas, co-develop solutions, and contribute to technological advancements.

1.4 Scope of the project

The scope of **Tech Talk** includes the development and deployment of a mobile application that serves as an interactive knowledge-sharing platform for academia and industry professionals. The project focuses on:

1. User Groups:

- **Students:** Gain industry insights, ask questions, and collaborate on research discussions.
- **Special Lab Members:** Engage in expert-led discussions and share innovations.
- **Industry Professionals:** Provide insights, share trends, and collaborate with academia on real-world problems.

2. Key Features:

- **Discussion Forums:** Topic-based spaces for focused discussions.
- **Expert Q&A Section:** Users can interact with industry experts and academic professionals.
- **NLP-Based Summarization:** Automatic summarization of research papers, articles, and discussions.
- **Curated News Feed:** Regular updates on industry trends and technological advancements.
- **Collaboration Hub:** A space for brainstorming, idea sharing, and co-development of solutions.

3. Technological Aspects:

- **Mobile Application Development:** Built for both Android and iOS platforms.
- **Backend Infrastructure:** Secure cloud-based data storage and real-time communication.
- **Artificial Intelligence & NLP:** Implemented for automated summarization and content recommendations.

4. Expected Impact:

- Enhanced collaboration between students, academia, and industry.
- Improved accessibility to research findings and industry trends.
- Time-efficient information processing through NLP algorithms.
- Increased participation in innovation-driven discussions.

2. EXISTING SYSTEM

Currently, several platforms facilitate collaboration between students, academia, and industry professionals, but they have limitations:



1. **Slack & Microsoft Teams:** Provide real-time communication and collaboration features but lack customization for academia-industry interactions. Their interfaces can be complex, and they do not integrate AI-powered summarization or brainstorming tools.
2. **ResearchGate:** Focuses on academic knowledge sharing through research publications but lacks real-time interaction and industry-specific collaboration features.
3. **Hybrid Platforms:** Some platforms offer a mix of communication and collaboration tools but lack integration of NLP for summarization and real-time interactive brainstorming.
4. **AI-Based Idea Management Systems:** Use NLP and machine learning for idea clustering but are not designed for multi-stakeholder academic-industry collaboration.

3. PROPOSED SYSTEM

Tech Talk introduces a dedicated mobile application that addresses the limitations of existing platforms by integrating:

1. **Real-Time Communication & Collaboration:** Enabling instant discussions between students, academics, and industry professionals.
2. **NLP-Powered Summarization:** Automatically condensing lengthy research papers, discussions, and articles to save users' time.
3. **Expert Q&A & Insights:** Providing a platform for users to ask industry experts questions and receive real-time guidance.
4. **Dedicated Discussion Spaces:** Organized forums focusing on technology, innovation, and industry trends.
5. **Curated Content:** Aggregating relevant research findings, industry news, and events to keep users informed.
6. **Interactive Brainstorming Tools:** Facilitating idea-sharing, co-development of solutions, and problem-solving.

4. LITERATURE SURVEY

Smith et al. (2021) [1] conducted a study on the adoption of Slack in professional environments, highlighting its effectiveness in real-time messaging and team collaboration. However, the study pointed out that Slack's general-purpose nature makes it less suited for specialized academic-industry interactions, limiting its impact in fostering innovation-driven tasks.

Hernandez et al. (2020) [2] analysed Microsoft Teams' impact on corporate collaboration. While its virtual meeting tools and document sharing capabilities were praised, the platform was criticized for its complex interface and lack of customization for addressing specific industry challenges, such as co-developing solutions with academia.

Bedford (2019) [3] explored ResearchGate's role in academic knowledge dissemination, noting its success in connecting researchers and sharing publications. However, the platform's lack of real-time interaction features and limited integration with industry stakeholders were identified as significant drawbacks for fostering innovation.

Davis et al. (2022) [4] demonstrated the integration of GPT-based NLP models into educational tools, enabling automatic summarization of lengthy documents and extraction of actionable insights. While the implementation improved user efficiency, the study highlighted the lack of real-time discussion capabilities integrated with these NLP tools.

Chen & Gupta (2023) [5] examined hybrid platforms designed to support academic-industry collaborations. The platforms excelled in facilitating asynchronous communication but lacked the integration of advanced technologies like NLP and interactive brainstorming tools, limiting their effectiveness in real-time problem-solving.

Johnson et al. (2021) [6] discussed the implementation of AI in idea management systems for organizations. These systems used machine learning and NLP to analyse user-submitted ideas and cluster them based on relevance. Despite their innovation, these tools were rarely designed to handle multi-stakeholder environments, leaving a gap in fostering joint academia-industry efforts.

5. SYSTEM ARCHITECTURE

Tech Talk follows a three-tier architecture comprising:

1. Presentation Layer (Frontend)

- Mobile app (React Native/Flutter) for Android & iOS.
- Web interface (optional).
- Features: Discussion forums, expert Q&A, NLP-based content summarization, curated news.

2. Business Logic Layer (Backend)

- API Gateway for handling requests.
- Authentication & Security (OAuth 2.0 / JWT).
- Discussion Management Module for real-time collaboration.
- NLP Engine for summarizing research papers & discussions.
- AI-based Recommendation System for personalized content.
- Notification & Messaging Service for push notifications & updates.

3. Data Layer (Database & NLP Services)

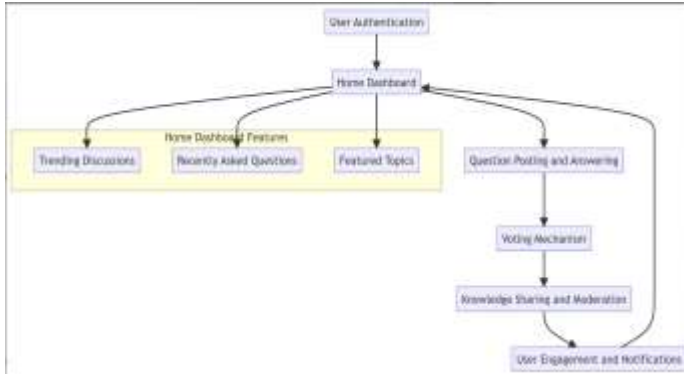
- PostgreSQL / MongoDB for data storage.
- Redis for caching frequently accessed data.
- NLP Engine (BERT, GPT, Text Rank) for AI-driven summarization.
- Cloud Storage (AWS S3 / Google Cloud) for media and document storage.

4. Technology Stack



- Frontend: React Native / Flutter
- Backend: Node.js / Spring Boot
- Database: PostgreSQL / MongoDB
- AI & NLP: Python (spaCy, BERT, GPT)
- Cloud: AWS / Google Cloud

5.FLOWCHART



6.FEATURES AND FUNCTIONALITIES

At its core, Tech Talk is a robust application designed to empower users through cutting-edge features:

- **Dedicated Discussion Spaces:** Organized forums for focused conversations on technology, innovation, and industry trends.
- **Expert Insights and Q&A:** A platform to ask questions and receive real-time guidance from experts.
- **Curated Content:** Aggregated and reliable updates on the latest industry news, research findings, and events.
- **Collaboration Tools:** Resources for brainstorming, idea-sharing, and co-developing solutions.
- **NLP-Powered Summarization:** Advanced algorithms that condense lengthy documents and discussions, making complex information accessible and actionable.

These features not only enhance usability but also create an environment conducive to innovation and problem-solving. By leveraging advanced technologies like natural language processing, Tech Talk ensures that users can focus on what truly matters—generating ideas and driving change.

7.METHODOLOGY

A. Requirement Analysis: The initial phase involved conducting extensive user research through surveys and interviews with students, educators, and industry professionals. The findings highlighted the need for a dedicated communication platform, expert insights, and collaboration tools tailored for academia-industry interactions.

B. System Design and Architecture: The system architecture was designed to ensure scalability, efficiency,

and real-time interaction. A microservices-based architecture was chosen to enhance modularity and ease of integration with future technologies.

C. Technology Stack Selection: The technology stack was selected to optimize performance and user experience: Front-end: React Native for cross-platform compatibility. Back-end: Node.js with Express for efficient server-side processing. Database: MongoDB for flexible data handling and scalability. Natural Language Processing (NLP): Integration of OpenAI models for text summarization and intelligent content extraction.

D. Development and Implementation: An Agile development methodology was adopted, with iterative sprints focusing on:

1. **Feature Development:** Incremental implementation of discussion spaces, real-time chat, NLP-based summarization, and expert Q&A.
2. **User Feedback Loops:** Continuous testing and feedback integration to refine user experience.
3. **Version Control and CI/CD:** Ensuring seamless deployment and updates through Git and cloud-based CI/CD pipelines.

E. Testing and Debugging: The system underwent rigorous testing, including: Unit Testing: Validation of individual components for correctness. Integration Testing: Ensuring seamless interaction between system modules. Performance Testing: Evaluating response times and system behaviour under various loads.

F. Deployment and Maintenance: The application was deployed on a cloud platform to ensure high availability and scalability. A continuous integration and deployment (CI/CD) pipeline was established for automated updates and feature enhancements. Regular maintenance and monitoring ensure system reliability and security.

8.RESULTS

The development and implementation of Tech Talk have demonstrated significant improvements in real-time communication, collaboration, and knowledge sharing between students, Special Lab members, and industry professionals. The platform's dedicated discussion spaces facilitated structured conversations on emerging technologies, leading to increased engagement and idea exchange.

User feedback indicates that the app effectively enhances industry-academia interaction, with students gaining valuable insights from industry experts and professionals benefiting from academic research. The integration of natural language processing (NLP) features, particularly automatic summarization, has streamlined information processing, reducing the time required to analyze lengthy documents while improving comprehension.

Preliminary usage data reveals an increase in knowledge-sharing activities, with more users actively participating in discussions and co-developing solutions to industry



challenges. The curated content section has also been well received, ensuring users stay updated with the latest industry trends and advancements.

Overall, the implementation of Tech Talk has created a dynamic and collaborative ecosystem that fosters continuous learning, innovation, and problem-solving.

9.CONCLUSION

Tech Talk is a comprehensive mobile application designed to bridge the gap between academia and industry by providing real-time communication, collaboration, and knowledge-sharing tools. The platform integrates Natural Language Processing (NLP) to enhance user experience by summarizing discussions, extracting key insights, and facilitating efficient information retrieval.

By offering dedicated discussion spaces, expert Q&A, curated content, and brainstorming tools, Tech Talk fosters a culture of innovation where students, researchers, and industry professionals can exchange ideas and co-develop solutions to real-world challenges. The implementation of Web Sockets for real-time communication, MongoDB for flexible data management, and cloud-based deployment ensures scalability and responsiveness.

The rigorous testing, security measures, and continuous integration/deployment (CI/CD) practices guarantee the reliability and performance of the system. Through ongoing user feedback and enhancements, Tech Talk is poised to become a leading platform for fostering academia-industry collaboration and driving technological advancements.

Future work will focus on enhancing AI-driven recommendations, expanding multilingual support, and integrating additional automation features to further optimize user engagement and knowledge discovery.

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