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Enhancing Student Placement with Cross-Platform Application

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Abstract: ***We are developing cross-platform application for training and placement activities where we are using React Native and Spring Boot. React Native provides an efficient way to develop applications using a single code base for all operating systems and it is widely used by many firms for cross-platform application development. We are using Spring Boot for managing all back end operations and creating APIs and we can say it is middle ware between the user and database. In our application we are trying to implement three instances, which are 1. Student Module, 2. Admin Module, 3. Master Admin Module, where the Master Admin Module has all control and super access to the application. We are introducing new features like image pre-processing for document verification and we are also implementing Excel to PDF converter in our application to convert student data into a pdf file. We are also trying to get students data when once the student get registered at Training and Placement activities, by using this feature we are trying to manage our storage efficiently and try to avoid repeating data collection from students.***

Keywords: Cross-platform, Image pre-processing.

I. INTRODUCTION

Every student can connect with their dream careers via our system. A modern technology consists lot of power, Our system will get developed with the help of emerging technologies such as React Native for seamless cross-platform functionality, NoSQL for robust data management, and the scalability of AWS for unparalleled performance, our platform is set to be a game-changer in the field of Campus placement. Our ultimate mission is mission to streamline the placement process.In our system Students , recruiters , training and placement management cell are connected to each other on a single platform.We have used React Native and Spring Boot to develop this app, ensuring optimal resource utilization and a visually appealing interface. The app is designed to cater to the unique needs of students, administrators, and super admins, automating essential tasks.Some exciting features of the app include personalized logins for different users, instant messaging, application tracking, resume building, and document verification. Our app facilitates effortless communication and information sharing among all parties involved. Additionally, it automatically converts Excel files to PDFs, making data management more accessible.NoSQL database schema efficiently store and retrieve student and job placement information.Our cross-platform app promises to revolutionize the way students secure jobs. It's not just about benefiting students but also about enhancing the overall educational experience. Keywords: NoSql, AWS, Automation, Security, Cross-Platform.

II. LITERATURE SURVEY

S. G. Totad et al. [1] The provided abstract outlines a web-based system designed to streamline training and placement activities in educational institutes. The system targets multiple users, including Training and Placement Officers (TPOs), students, and companies.Mythili M et al. [5] [13] It seeks to enhance the efficiency of placement processes by automating tasks and facilitating communication among colleges and students through a regional network of TPOs. The system aims to provide students with resources to prepare for campus recruitment, including aptitude, technical, and communication skill modules, along with quiz and test assignments to assess their readiness. Additionally, it allows companies to interact with TPOs, post job vacancies, and view student profiles for recruitment purposes.[6] However, the abstract mentions certain limitations in some existing systems, such as the absence of online training resources, SMS integration, and data management challenges. Despite these limitations, the proposed system's objectives include improving data integrity, resource management, and overall efficiency in training and placement activities within educational institutions.

Anjali et al. [3] The main objective of this system is to improve the efficiency of student information management for campus placement purposes. Aim of system is to reduce the manual workload involved in data entry and maintenance of student records , System aims to save time and resources.Preethi Miriyala et al. [5] [6] [13] Data security is also main focus, ensuring the confidentiality and integrity of student profiles is the essential part.

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The one-time registration feature simplifies the process for students, allowing them to upload and maintain their personal and educational information as well as documents which are required. Additionally, the system facilitates interaction between companies and students, enabling the filtering of student profiles based on company requirements.In a broader context, this project serves to address common challenges faced by colleges when managing placement activities. It aims to modernize and streamline the process, reducing paperwork and manual labor. However, the absence of specific limitations in the abstract leaves room for further exploration of potential challenges and their solutions. The economic feasibility of the project is mentioned briefly, indicating its potential for cost-effectiveness. The technical feasibility is implied but lacks specific details, and the operational feasibility emphasizes usability and efficiency.

Cmak Zeelan Basha et al. [6] The abstract presents the ”Placement Monitoring System,” which plays a crucial role in connecting university students with job opportunities. It highlights the continuous increase in job opportunities for students and the need for placement cells to manage student profiles, documents, and information about recruiting companies. The abstract suggests that the existing system relies on manual data management, which is time-consuming and may result in inefficiencies. System aims to streamline campus placement activities by leveraging the Service Now platform, a cloud-based IT service management tool. The main objectives of the proposed system include making the work environment of the placement cell more efficient, keeping students updated about placement opportunities through emails, transferring only relevant information, and reducing the workload of placement authorities. [6] The use of the Service Now platform is aimed at simplifying data management, modification, and notification processes. The system employs artifacts such as client scripts, UI policies, roles, access controls, workflows, and a service portal to achieve its objectives. The primary goal of the proposed system is to increase the efficiency of campus placement monitoring and communication between students and companies. The idea was to improve the efficiency of student placement monitoring and communication with companies. Mythili M et al. [5] [13] The entire process of the study in universities is focused on ensuring data security and reducing manual data management tasks, it also focuses on ensuring data security and reducing manual data management efforts, ultimately improving the overall campus placement process.

Mythili M et al. [5] Its main goal is to efficiently manage student information for recruitment processes, providing a well organized database of student profiles, including personal details and technical skills essential for job applications. The system simplifies the maintenance of student profiles and enhances communication between students and recruiters. ”E-PLACEMENT” uses JSP with a three-tier architecture and Oracle for back end database. S. R. Bharamagoudar et al. [2] Shivani Chaurasia et al. [13] This paper addresses the limitations of manual data management in placement activities and highlights the objectives of automation, offering a more efficient and accessible solution for colleges. The advantages of this proposed system include streamlined data handling, improved communication, and easy information access for placement processes within educational institutions.

Navaneeth Kumar B et al. [8] The paper introduces the web-based application made for educational institutions, particularly addressing the challenges faced by the training and placement department. It highlights the significance of streamlining the internship placement process, which is a crucial aspect of higher education, preparing students for future employment. The traditional manual approach to placement management is recognized as time-consuming and error-prone, involving extensive data handling and communication with multiple stakeholders. this paper represents a modern solution to these issues, offering efficiency and data security. The project employs Python and the Django web framework, known for their simplicity and rapid development capabilities. It describes the system’s scope, user-friendliness, eligibility checks, and the essential role of IT deployment. The paper underlines the multidisciplinary nature of the development team and their agile methodologies. Lastly, it emphasizes the importance of training, support, and maintenance to ensure remains effective in managing internship placements

Sofia Tasneem et al. [6] The paper presents an Campus Placement System designed to automate and streamline the college’s placement process, including student data collection, authentication, email notifications, eligibility checks, and a user-friendly interface for students, placement officers, companies, and college staff. However, the paper lacks in-depth technical insights and user feedback, which could provide a more comprehensive view of the system’s effectiveness. Mythili M et al. [5] Shivani Chaurasia. et al.[13] The system aims to reduce paperwork, increase efficiency, and improve accuracy in the placement process. Limitations of the given system include a potential learning curve for users transitioning from manual processes and the need for a robust security infrastructure to protect sensitive student data. Objectives include enhancing data management, reducing workload for placement officers, and creating a more eco-friendly, efficient placement process. The system has the potential to improve placement efficiency, particularly by automating tasks and improving data accuracy.

Shubhangi Chaware et al. [7] This Paper Gives us the information about the Web Based System which helps in automating and streamline the placement process in a collage Placement process . Shivani Chaurasia et al. [13] [5] This paper replaces the manual process to the web based online efficient process.

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This makes the accurate and efficient placement activities enhances data management by providing the correct information to Training and Placement Cell. This creates User Engagement and interface usability.

Mrunali Mehar et al. [8] This paper is representing the critical problem related to the every educational institutes-Training and Placement Cell. The Phase of T and P is very important for students ,in which they are carrying too much pressure of placements and in this time TPO have to play the role of guide to these students for the placement season. [5] [7] [13] This paper gives the solution to this problem by simplifying the process as much as possible ,this system creates a network and connects the students with the TPOs so that they will get notified about the placement events going to happen in the collage, so that everyone will get aware and get more and more opportunities. This paper gives us the solution to manage the training and placement activities by introducing us the resources availability, skills enhancement, data usability, efficiency, notification readability, user adoption for the effective working.

Mithilesh Pandit et al. [12] This paper shows and discusses the development and focuses on the replacement of the paper records in management. Paper records makes it time consuming and inefficient ,it needs labour intensive tasks for managing and retrieving paper records results in too much hard work. [5] [6] Shivani Chaurasia. et al. [13] Objective of this paper is to enhance the efficiency by providing an online interface to improve the security of data management .It also in created the data access ability and improve the overall data management system for both staff and students. It has various features for exam section, placement cell, administrators,for students and teachers and all

Literature Review

Sr. No.	Title & Author	Objectives	Limitations
1	Web based student information management system. S.r.bharamagoudar, geeta r.b., s.g.totad	1. The primary objective is to automate the process. 2.User Friendly Interface. 3.Can make communication with students, placement coordinators, staff, alumni's, etc.	1. No feature for checking the data filled by student is correct or not. 2.Access Control.
2	Web based placement management system. Anjali.v ,jeyalakshmi.pr, anbubala.r,sri mathura devi.g,ranjini.v	1.The proposed system aims to data integrity, ensuring the confidentiality and integrity of student profiles. 2.It reduced time and resources efficiency for working faster.	1.Only one time Registration system in this even we cannot update the system after registering once 2.We must make manual data entry which is time consuming and can be with errors
3	Enhanced Technique for Placement Monitoring using Servicenow Portal. Cmak Zeelan Basha, Sofia Tasneem, Preethi Miriyala, Syed Saleem Basha	1.Helps placement team by increasing the speed of work and efficiency. 2.It aims to keep students informed about placement opportunities through email notifications. 3. The system intends to transfer only essential information to students. 4. One of the main goals is to reduce the manual workload on placement authorities.	1. The existing system relies on manual data entry and updates, which can be timeconsuming and error-prone. 2. The system allows to potential security issues related to data management but does not provide specific details.

4	E-placement management. Dr.angel latha mary.s, mythili m, aishwarya r, shenbagam p, sandhiya c	1. Made to automate the internship placement process for students. 2. This reduces the administrative burden on students as well as placement officers. 3.Confidentiality and Data Security 4. ensures that only eligible students are considered for placements. manage their personal and educational information.	1. Relies on technology and an internet connection, which could pose challenges for students. 2.Training related things are not provided. 3.Maintenance and Updates are regularly needed for SMS related service.
5	Web Based Information System for	1.It makes streamline the data collection process for students'	1. It does not provide online training resources.
	Training and Recruitment at Industry. Shubhangi Chaware, Kishor Kshirsagar, Gajanan Bankar,Pranay Ramtekkar, Bhagyesh Lautre.	Resumes and related information, making it more efficient and less timeconsuming. 2.Less time consuming. 3.Increases the communication between students and staff. 3.gives features like updating, application, reviewing the data.	2. There is lacks of SMS integration in system. 3. It stores data in Excel format which makes system inefficient. 4. No off-campus job related extra tab is there
6	Study of implementation of online Placement system. K. G. Patel , c. K. Patil	1.Reduce Paperwork 2.Enhanced Data Management by creating a comprehensive database of student records. 3. It is more efficient and accurate. 4.User-Friendly Interface.	1.Manual System Dependency. 2.Data Management Challenges. 3.it is challenging to communicate and notify them of placement opportunities.
7	Student Internship Placement Management System using Python. Shivani Chaurasia	1. Made to automate the internship placement process for students. 2. This reduces the administrative burden on students as well as placement officers. 3.Confidentiality and Data Security 4. ensures that only eligible students are considered for placements. 5.Comprehensive Solution	1. Relies on technology and an internet connection, which could pose challenges for students. 2.Training related things are not provided. 3.Maintenance and Updates are regularly needed for SMS related service.
8	Ai-based placement management system Mithilesh pandit, prakash raje, prasad lomate, dr.nikita kulkarni	1.Very much Efficient 2.Data Usability 3.It suggests the skills you should work on by referring the job role.	1.As data is checked by AI so we cannot rely on that data we have to recheck that data 2.It suggests the skills but does not provide the links to resources to learn those skills. 3.User Adoption

9	Design and Implementation of Students' Information Management System (SIMS) Based on ASP Cheng-Hui YANG	1.Improvement in Efficiency 2.Online Student Interface. 3.Security Enhancement.	1.Manual Records time consuming and inefficient. 2.To convey information to students, it needs to be displayed on a physical notice board 3.Inefficient Data Retrieval

III. PROPOSED SYSTEMS

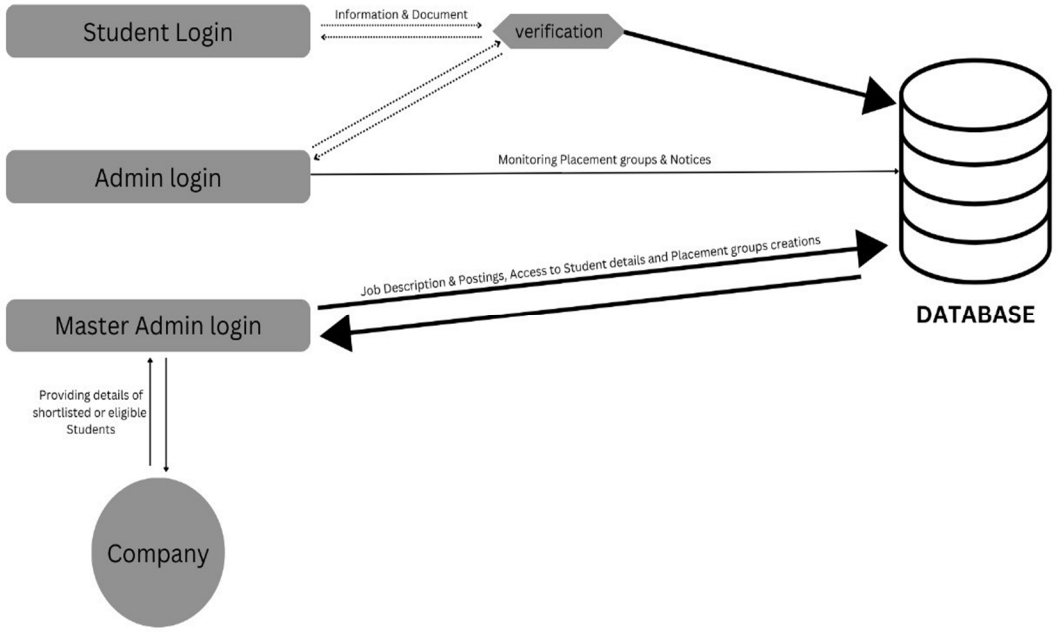

Figure 1: Basic Architecture

A. Student Module

If a student logs in, they gain access to a range of features within the student module:

1) The Home tab provides all placement-related notices and upcoming event reminders.
2) The New Opportunities tab showcases new companies visiting the college for placement drives. Students who meet the eligibility criteria can apply directly from this tab.
3) The Application tab displays the status of student applications to various companies, including whether they have been shortlisted or progressed to further rounds.
4) The Resume tab allows students to generate, view, and download their resumes.
5) The More tab provides access to the student's profile, support services, and logout options.

B. Admin Module

When an admin logs in, they have access to the following functionalities:

1) The Home tab provides notifications about placement drives and departmental event reminders.
2) The Students Details tab offers a comprehensive overview of each student, including personal information, eligibility, and applications to different companies.
3) The Groups tab displays companies created by the master admin.
4) The MNotification tab allows admins to receive notifications from the master admin.

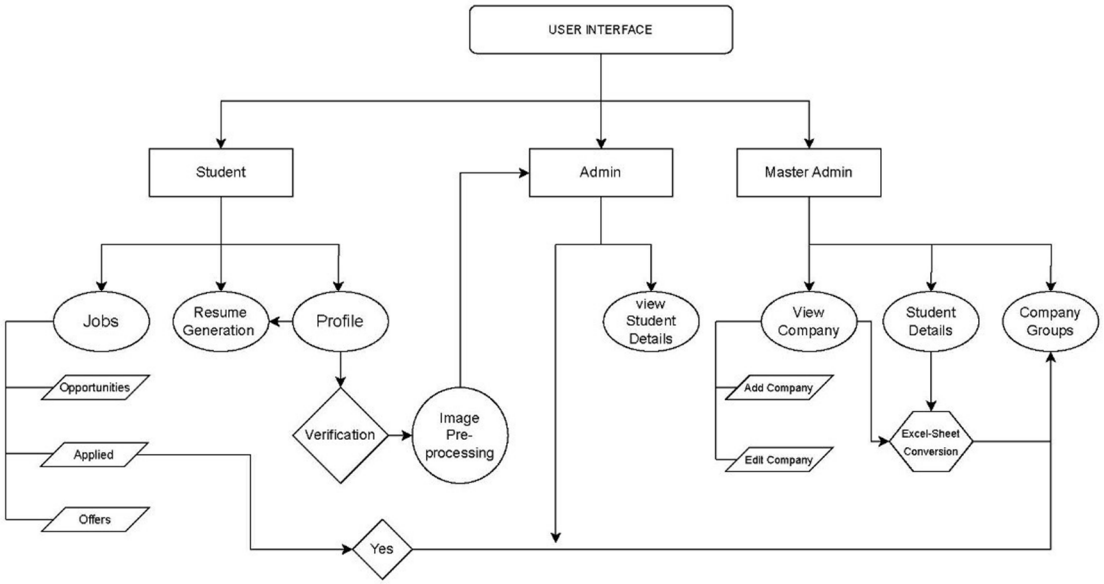

Figure 2: Flow Diagram

C. Master Admin Module

For the master admin, who possesses access to students across all departments and admin accounts:

1) The Home tab enables the generation and distribution of notifications to students and departmental admins.

2) The Companies tab facilitates the addition of new companies and provides insights into eligible students and those who have advanced to further rounds in each company's placement process.

3) The Students Details tab offers a complete profile of each student, including personal information, eligibility, and company applications.

4) The Groups tab allows management of groups created for each company.

IV. CONCLUSION

In conclusion, this literature review has offered a complete analysis of online training and placement systems. After thoroughly analyzing the previous literature surveys, so many things get noticed, such as benefits of system, features and overall working of the previous placement systems.

The reviewed papers has multiple advantages such as enhanced efficiency, data management, precision, security, data authentication and communication among placement cell and students, in comparison to traditional manual methods. System automates numerous aspects of training and placement management, including student registration and profile management, job posting, progress tracking, employer registration resume upload. There is good communication established among placement cell and student. Viewed placement systems also consist good data management as well as storage of student data. Management and tracking of posted job is performed efficiently. These systems offer a overall solution, covering student registration to placement monitoring, catering to a diverse range of stakeholders, including students, alumni, administrators, and employers.However, online training and placement systems offers multiple benefits, they have challenges to addressed. Key concerns include system security, protecting sensitive student data from unauthorized access, verifying the student data uploaded and many more. Additionally, effective automation using AI remains a challenge that needs to be addressed.

In summary, online training and placement systems stand as invaluable assets for educational institutions. Their capacity to augment the efficiency and effectiveness of the training and placement process benefits all parties involved and presents an exciting avenue for future exploration and improvement.

Keywords: Automation, Security, Authentication, Communication.

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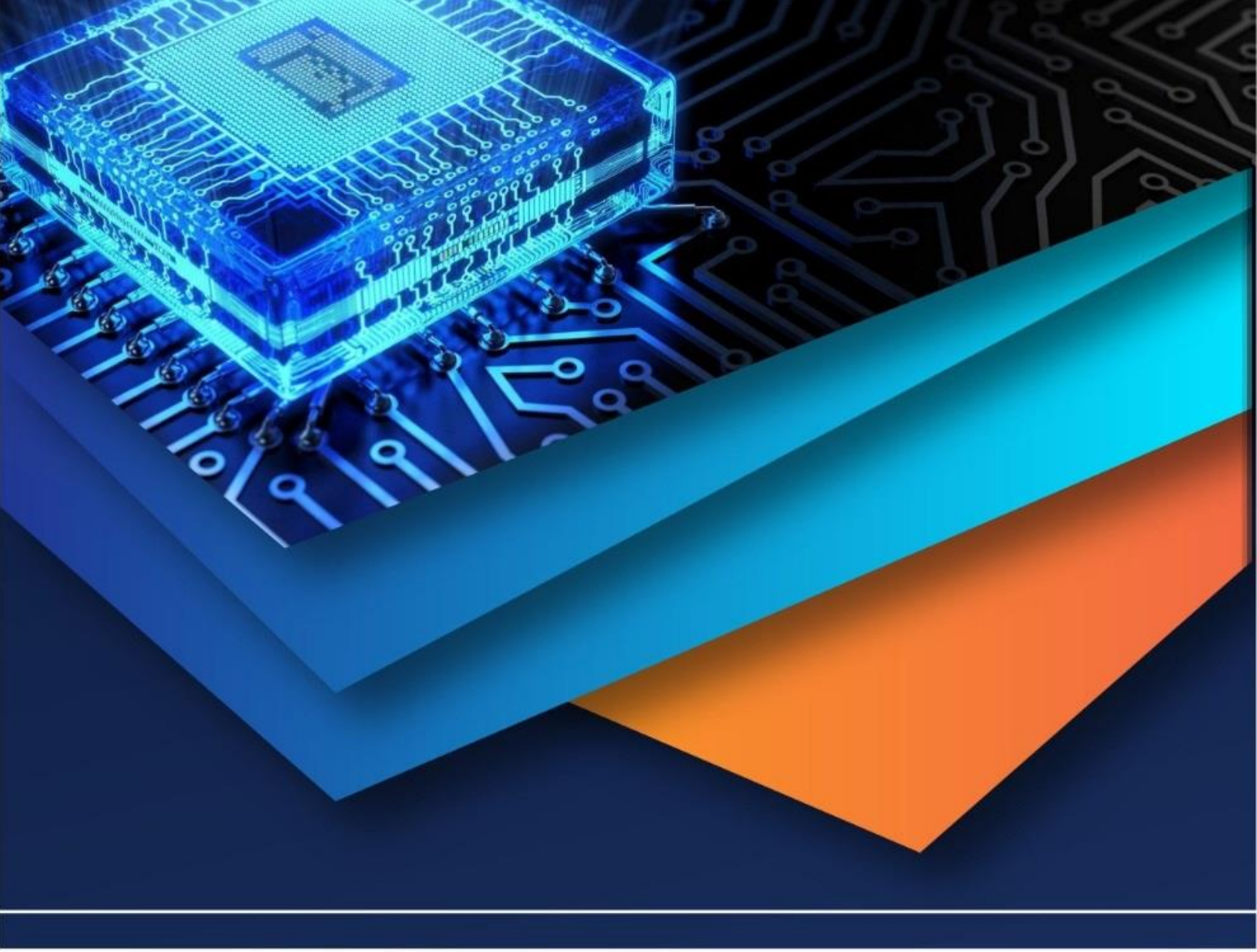

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