iJRASET
International Journal For Research in Applied Science and Engineering Technology



INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Volume: 13 **Issue:** VI **Month of publication:** June 2025

DOI: https://doi.org/10.22214/ijraset.2025.72358

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International Journal for Research in Applied Science & Engineering Technology (IJRASET)
ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538
Volume 13 Issue VI June 2025- Available at www.ijraset.com

SkillSprint AI - Skill Enhancement and Career Success with AI!

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Abstract: ***In today's competitive academic and professional environment, students often lack personalized guidance in learning, resume optimization, and placement readiness. "SkillSprint AI" is an innovative, AI-powered platform that addresses this gap by offering tailored roadmaps, AI-driven resume analysis, real-time skill tracking, and aptitude + coding preparation. Through a structured questionnaire, the AI analyzes students' strengths and weaknesses to generate customized learning paths. With features like ATS-based resume scoring, a DSA practice tracker, coding platform, and analytics dashboard, SkillSprint empowers students to pursue their career goals efficiently. This paper surveys the technological and educational significance of SkillSprint, its implementation, and its potential to revolutionize placement preparation.***
Keywords: AI Mentor, SkillSprint, Personalized Learning, ATS Resume Analyzer, DSA Practice Tracker, Career Guidance, Placement Readiness.

I. INTRODUCTION

The increasing demand for skilled graduates in the tech industry has highlighted the inefficiencies of generic learning resources and outdated placement preparation methods. Students often struggle to find direction, track progress, and tailor their resumes to industry standards. SkillSprint addresses this challenge by combining AI technologies with personalized learning techniques. This paper explores the core components of SkillSprint and discusses its potential to improve placement readiness.

In today's competitive world, students struggle to identify their strengths, track their learning, and prepare effectively for placements. SkillSprint AI is an all-in-one AI-powered platform designed to bridge this gap by providing personalized roadmaps, skill tracking, and career guidance. The journey begins with a smart assessment, where students answer a set of strategically designed questions. Based on their responses, AI analyzes their strengths and weaknesses to generate a tailored learning roadmap. This roadmap guides them through coding, aptitude, resume building, and more, ensuring they follow a structured and efficient path toward their career goals. With an intuitive dashboard, students can track their progress in real-time, monitor completed topics, and get AI-driven recommendations to stay on the right track. One of the standout features of SkillSprint AI is its Resume ATS (Applicant Tracking System) analyzer, which helps students create optimized resumes that align with industry standards. The platform scores resumes based on ATS criteria, highlighting areas for improvement in formatting, keywords, and structure. In addition, SkillSprint AI offers a comprehensive aptitude preparation module, where students can access company-specific aptitude questions and practice real-world problem sets to enhance their problem-solving skills. The system ensures that students are well-prepared for aptitude rounds in top company interviews, boosting their chances of success. Beyond aptitude and resumes, SkillSprint AI empowers students with an integrated DSA (Data Structures & Algorithms) tracker and coding platform. Students can log their completed problems, track coding progress across platforms like LeetCode and CodeChef, and even code directly within the platform using an interactive coding environment. The analytics dashboard provides insights into their performance, highlighting areas that need improvement and suggesting the next best steps in their preparation journey. By combining AI-driven insights, personalized roadmaps, resume optimization, aptitude training, and coding practice, SkillSprint AI transforms career preparation into a structured, engaging, and highly effective experience for students from all domains.

II. LITERATURE SURVEY

1) AI in Personalized Learning – Maher Joe Khan and Omar Jian (2023)

Discussed how AI can provide customized learning paths, adapting content to each student's strengths and weaknesses, aligning with SkillSprint’s roadmap feature**.** discuss the transformative potential of artificial intelligence in reshaping traditional educational methods. The authors argue that AI can move beyond the limitations of one-size-fits-all teaching models by offering a dynamic and individualized learning experience tailored to each student's unique needs. Through techniques such as machine learning, behavior tracking, and natural language processing, AI systems can assess a student's strengths, weaknesses, and learning pace to deliver

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targeted content recommendations. Their research highlights that personalized learning not only boosts engagement and motivation but also significantly improves academic outcomes, particularly in fields that require strong problem-solving skills. This concept is closely aligned with the SkillSprint platform, which adopts a similar AI-based approach to generate personalized learning roadmaps for students. By analyzing diagnostic responses and tracking ongoing progress, SkillSprint implements the theory proposed in this paper in a practical, results-driven educational tool.

2) AI Assistants in Higher Education – Ramteja Sajja et al. (2023)

Introduced intelligent virtual assistants that enhance student support through real-time recommendations and adaptive content delivery, similar to SkillSprint's AI chatbot. Explores the growing role of intelligent virtual assistants (IVAs) in higher education, focusing on how these AI-driven tools can significantly improve student support services. The authors highlight that IVAs are designed to provide real-time recommendations tailored to individual learners' needs, helping students navigate complex academic content and administrative processes more efficiently. By leveraging machine learning algorithms and natural language processing, these assistants adapt content delivery dynamically, ensuring that students receive personalized guidance that matches their learning pace and style. The paper further discusses the integration of these AI assistants in virtual learning environments to enhance engagement, reduce response times for student queries, and provide continuous academic support beyond traditional classroom hours. This adaptive and interactive approach aligns closely with SkillSprint's AI chatbot feature, which aims to personalize the learning experience by offering customized roadmaps, timely advice, and resources, thereby fostering a more effective and student-centric educational ecosystem.

3) AI-Generated Content and Resume Optimization – Yuntao Wang et al. (2023)

This paper explores how AI tools like GPT can be used to create and improve professional documents, especially resumes. It explains how AI can write high-quality content that looks professional, corrects grammar, and even makes the resume more attractive to Applicant Tracking Systems (ATS) — the software companies use to filter job applications. The AI can help match the resume to the job description by using the right keywords and formatting, increasing the chances of getting noticed by recruiters. The authors also studied how AI can analyze resumes, give suggestions, and help job seekers improve them quickly and easily. This concept is very similar to what your SkillSprint project offers — where an AI helps students by reviewing resumes, giving feedback, and making sure their resumes are optimized for job applications.

4) Chatbots for Self-Regulated Learning – Wijdane Kaiss et al. (2023)

Explored how chatbot-based interventions in e-learning platforms like Moodle improve students' self-monitoring, echoing SkillSprint's real-time feedback and tracking features. This paper looks at how chatbots can help students take better control of their own learning, especially in online learning platforms like Moodle. The researchers found that when students use chatbots, they get reminders, feedback, and suggestions that help them stay on track, manage their time, and reflect on their progress — all of which are important parts of self-regulated learning (learning on your own, with discipline and planning).

III. OBJECTIVES

1) Provide personalized, structured roadmaps for placement preparation.
2) Enable real-time progress tracking in coding, aptitude, and soft skills.
3) Optimize student resumes for ATS compatibility.
4) Provide analytics-driven insights for smarter preparation.
5) Create a seamless platform integrating resume, aptitude, and coding guidance.

IV. METHODOLOGY

SkillSprint follows a modular MERN-based architecture with Django for backend logic, React.js for frontend, and MongoDB for storage. AI components are powered using OpenAI GPT, TensorFlow, and Scikit-learn.

A. Core Features

1) Smart Skill Assessment – Students answer diagnostic questions; AI identifies strengths and weaknesses.
2) Roadmap Generation – Based on assessment, AI generates a personalized learning path.
3) Resume Analyzer – Built-in ATS score calculator highlights formatting and keyword gaps.

4) In-Browser Coding & Tracker – Tracks performance in DSA across platforms and offers in-app coding.
5) Analytics Dashboard – Offers performance summaries, improvement areas, and next-step suggestions.

B. Technologies Used
1) Frontend: React.js, Tailwind CSS
2) Backend: Django, Node.js
3) AI/ML: OpenAI API, TensorFlow, Scikit-learn

V. SYSTEM REQUIREMENTS

A. Hardware
- Intel i7 / AMD Ryzen 7 or higher
- 8GB RAM minimum (16GB recommended)
- 256GB SSD minimum

B. Software
- React.js, Tailwind CSS, Django, MongoDB
- AI Tools: TensorFlow, GPT API, Scikit-learn
- Services: AWS/GCP, Git, Docker

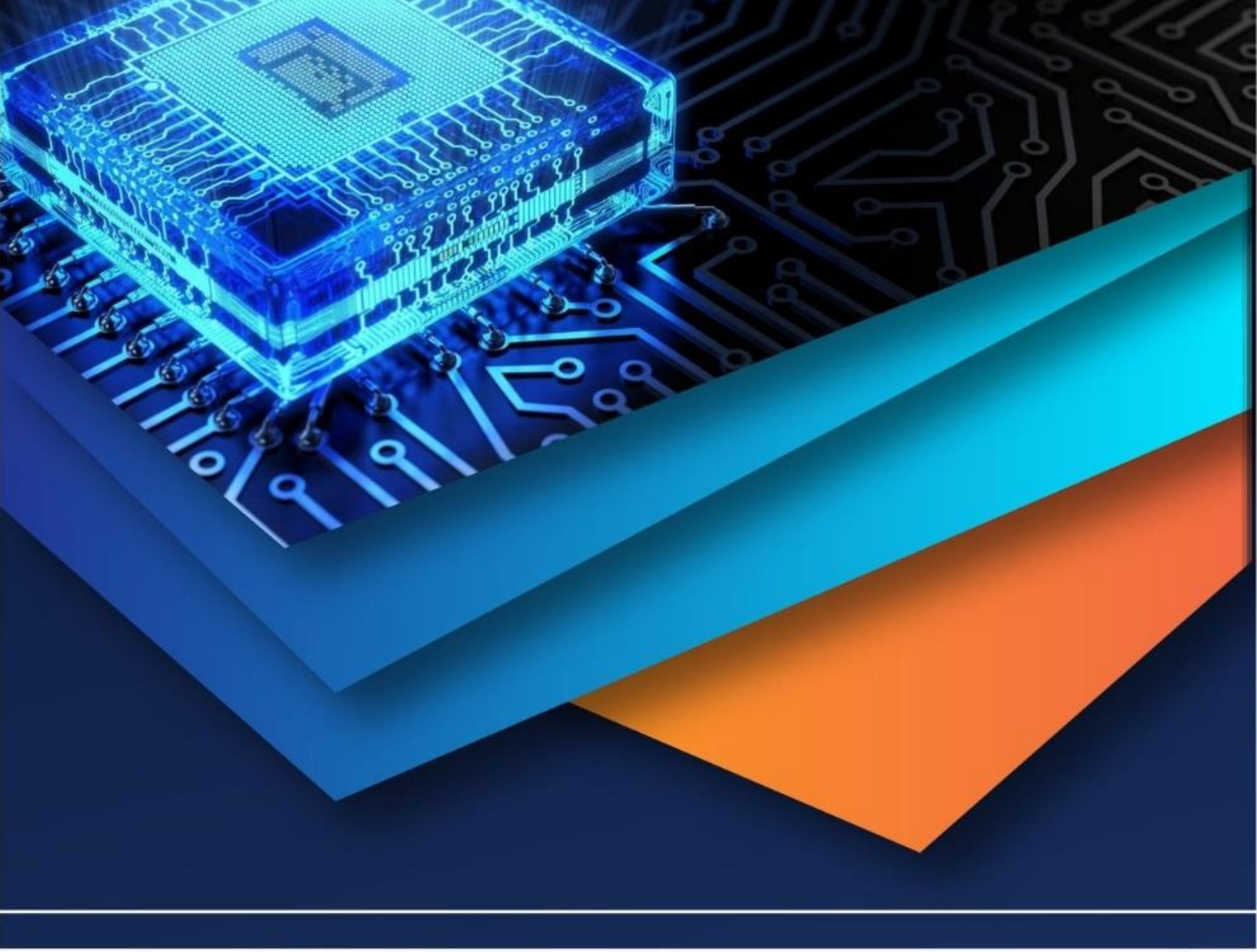
VI. CONCLUSION

SkillSprint AI provides a unified platform where students receive targeted, AI-enhanced guidance for career preparation. By integrating modern AI models, resume analysis, real-time coding feedback, and analytics, SkillSprint redefines how students prepare for placements. It not only empowers them with skills but also instills confidence through structured learning

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