IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
Volume 6, Issue 3, January 2026
Impact Factor: 7.67

Aitut – An AI-Based Intelligent Tutoring and Mentorship Platform

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Abstract: *Traditional educational systems struggle with rigid curricula and limited personalization, resulting in significant employability gaps where only 42.6% of Indian graduates meet industry standards. Current platforms lack integration of adaptive tutoring, real-time mentorship, and career guidance within accessible online/offline frameworks. This paper presents AI-TUT, a comprehensive AI-driven platform that analyzes learner behavior through machine learning to deliver customized study paths, performance analytics, mentorship matching, and employability tools including mock interviews. The system employs React Native frontend, FastAPI backend, and LangChain-powered AI models with MongoDB storage. Experimental evaluation with 150 undergraduates demonstrates 28% higher skill proficiency and 35% improved interview performance compared to traditional methods, validating AI-TUT's potential to transform higher education through scalable, equitable learning solutions.*

Keywords: Artificial Intelligence, Intelligent Tutoring System, Personalized Learning, Machine Learning, Employability Analytics, Adaptive Learning