
International Conference for Convergence in Computing Technology 2026 : Submission (554) has been created.

1 message

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Tue, Nov 18, 2025 at 3:22 PM

To: yash.gunjal@mitaoe.ac.in

Hello,

The following submission has been created.

Track Name: ITHREECTCON2026

Paper ID: 554

Paper Title: EduGen: A Multi-Model Generative AI Framework for Dynamic Educational Resource Synthesis

Abstract:

The exponential growth of digital learning has created an urgent need for intelligent systems capable of automatically generating personalized, multimodal educational content. Traditional content creation methods are labor-intensive, time-consuming, and often fail to adapt to diverse learning styles and paces. This paper presents EduGen, a novel multi-model generative AI framework that synthesizes comprehensive educational resources through the orchestrated integration of four distinct generative architectures. The system employs Generative Adversarial Networks (GANs) for intelligent question generation, Variational Autoencoders (VAEs) for efficient diagram compression and reconstruction, Transformer-based models with Low-Rank Adaptation (LoRA) for contextual summarization and note generation, and Diffusion Models for scientifically accurate illustration synthesis. Trained and evaluated on the ScienceQA dataset comprising a large-scale collection of question-answer pairs across K-12 science curricula, EduGen achieved outstanding performance metrics across text generation, image reconstruction, and visual synthesis tasks. Human evaluation by educators and students yielded strongly positive ratings for content relevance and overall system usability. This integrated approach demonstrates that multi-model generative systems can effectively automate educational content creation while maintaining pedagogical quality, accessibility, and adaptability across diverse learning contexts.

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Secondary Subject Areas: Not Entered

Submission Files:

EduGen_A_Multi_Model_Generative_AI_Framework_for_Dynamic_Educational_Resource_Synthesis.pdf (688 Kb, Tue, 18 Nov 2025 09:44:25 GMT)

Submission Questions Response: Not Entered

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