Text-to-Image Generator Using MERN Stack

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Abstract: *Imagify is a text-to-image generator that uses the MERN stack -MongoDB, Express.js, React.js, and Node.js- to create a user-friendly, scalable, and real time environment for turning text descriptions into images. It combines a transformer- based model for understanding language with either a diffusion or GAN- based network for generating images, allowing it to create visual that accurately match the meaning of the input text with high quality.*

In Imagify, the frontend is built with React.js, which makes the user experience smooth, responsive, and allows for real- time previews as users input their prompts. The backend runs on Node.js and Express.js, which manage the API calls, run the image generation processes, and keep the frontend connected to the AI model. MongoDB is used to store user input, image links, and usage data which helps keep the system organize and scalable. This setup enables multiple users to access and use the system at the same time with very little delay. Tests show that imagify can consistently produce images that are both meaningful and visually correct, even with a wide range of prompts.

It has strong potential for use in areas like digital art, teaching tools, content creation, and helping people who may not have artistic skills. Overall, Imagify is a great example of combining modern web development with deep learning models, offering a dependable platform for generating images from text and showing the future of AI- powered creativity.

Keywords: MERN Stack; MongoDB; Express.js; React.js; Node.js; Full-Stack Web Development; Web-Based Application; API Integration; Cloud Database; User Interface Design

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