

SKILLS

- **Programming Languages** : Java, JavaScript, HTML, CSS, SQL
- **Libraries and Frameworks** : React, Redux, Node.js, Express.js, Tailwind CSS
- **Tools** : Git, VS Code , IntelliJ Idea, Postman, MySQL, MongoDB, Webpack
- **Other Skills** : Data Structures & Algorithms, Microservices, RESTful APIs, System Design

PROJECTS

Moviease - Movie Show Booking | Javascript, React.js, Node.js, MongoDB, Express.js

- <https://moviease.onrender.com>
- Designed and developed MovieEase, a robust and scalable full-stack MERN application for browsing, booking, and managing movie shows by theatre and location.
 - Engineered UI interfaces and enhanced load time by 25% through code splitting and lazy loading.
 - Integrated a powerful backend with an engaging and intuitive frontend to deliver a seamless user experience.
 - Deployed secure JWT-based authentication and authorization features to enhance application security and protect user data.
 - Streamlined user experience by enabling seamless browsing of movies and showtimes across desktop and mobile platforms.
 - Adopted security best practices to safeguard against common vulnerabilities, including XSS, CSRF, and SQL injection.
 - Created unit tests using Jest to validate functionality, achieving 80% test coverage.

Kanban Board | Javascript, React.js, Tailwind CSS, HTML, CSS

- <https://kandoo.netlify.app>
- Built a web-based project management tool utilizing React.js, Tailwind CSS, uuid, and React Icons.
 - Enabled users to create and manage multiple boards for various projects, facilitating efficient workflow organization.
 - Implemented features for adding, editing, deleting, and updating tasks, along with assigning priority levels and marking tasks as completed.
 - Enhanced the task management experience by providing drag-and-drop functionality for moving tasks between different cards.
 - Employed performance optimization techniques such as memoization, virtualization, and asynchronous data fetching to improve the application's responsiveness by 32%.

Calc | HTML, CSS, Javascript

- <https://sonic-calc.netlify.app/>
- Developed a responsive calculator web application that performs basic arithmetic operations and retains a history of calculations, enhancing user experience.
 - Crafted a sleek and modern user interface with multiple light and dark modes using HTML, CSS, Tailwind CSS, and JavaScript, improving accessibility and user engagement.
 - Provided a GitHub link for the project: <https://github.com/Somen1228/calculator>.

Microturbine Driven - Biogas Energy System | MATLAB, Simulink

- Engineered a MATLAB-based model simulating biogas-fueled power plant dynamics using MATLAB code and simulink, integrating key components for enhanced performance.
- Maintained a consistent output of 25 kW while managing load variations, .
- Generated stable sinusoidal waveforms during load variations, illustrating the system's robustness and reliability under dynamic load conditions and other diverse operational scenarios.
- Provided insights into biogas energy system optimization, contributing to sustainable energy solutions with real-world applications.
- **Research paper:** <https://doi.org/10.1016/j.renene.2024.121205>.

EDUCATION

Scaler	2024
Specialized in Software Development & Problem Solving	
Coursework: Data structures and Algorithms, Databases and SQL, High-Level Design (HLD), MERN Stack	
NIT Agartala	2022
M.Tech in Integrated Energy System 8.92 CGPA	

PUBLICATIONS

- Somen Rajak, Dipradidhiti Roy Barman, Subhadeep Bhattacharjee. Analysis of an Anaerobically Digested Animal Waste-Based Microturbine Driven-Biogas Energy System. Renewable Energy, Volume 234, 2024, Article 121205, ISSN 0960-1481. <https://doi.org/10.1016/j.renene.2024.121205>.
- S. Rajak, D. R. Barman and S. Bhattacharjee, "Biofuel driven microturbine integrated biogas power generation," 2022 4th International Conference on Energy, Power and Environment (ICEPE), 2022, pp. 1-5, doi: 10.1109/ICEPE55035.2022.9797983.