H Aditya Kumar

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Education

Indian Institute of Technology, Bhubaneswar — GPA: 8.22
B.Tech And M.Tech (Dual Degree) Mechanical Engineering — *Nov. 2021 - present*

Modern Vidya Niketan, Faridabad — Percentage: 85%
Senior School Certificate Examination, CBSE — *April 2018 - March 2020*

Projects

Chess Engines - ML 〇 — *Live link*
- *Engineered a sophisticated chess platform, Chess Engines, offering three distinct play modes: Random AI, Stockfish engine, and an ML Model trained on 60,000 chess matches for optimal move prediction.*
- *Developed robust Flask APIs to power the chess engines, ensuring high performance and seamless integration.*
- *Architected the frontend with Next.js, enhancing user engagement through responsive design and intuitive interface, compatible with both mobile and desktop devices.*
- *Streamlined deployment processes by Dockerizing the backend and leveraging Azure for scalable and reliable service hosting; deployed the frontend on Vercel for efficient content delivery.*
- *Achieved a user-friendly experience with a responsive UI, significantly improving accessibility and interaction on multiple devices.*

PassOP - Password Manager 〇 — *Live link*
- *Developed a responsive password manager website, PassOP, using React and Vite framework, ensuring compatibility across mobile and PC platforms.*
- *Implemented secure local storage and MongoDB database for password management, including functions for adding, editing, and deleting passwords.*
- *Designed an intuitive user interface with high-quality designs and icons using Tailwind CSS, improving user experience and visual appeal.*

YTScoop - YouTube Video Downloader 〇 — *Live link*
- *Created YTScoop, a React-based website enabling users to download YouTube videos in MP4 and MP3 formats.*
- *Implemented a backend with Express.js and utilized the yt-dl module to fetch and process YouTube data for seamless downloads.*
- *Deployed the application on Vercel, ensuring reliable performance and easy access for users.*

HTTP Server with File Management and Compression Capabilities 〇
- *Designed and Implemented Efficient HTTP Server: Created a multi-threaded HTTP server in C++ capable of handling concurrent client connections with optimized socket programming techniques.*
- *Integrated Advanced File Handling and Compression: Engineered the server to support file upload and download functionalities, and incorporated gzip compression for efficient data transmission.*
- *Robust Error Handling and Protocol Support: Ensured comprehensive error handling and compliance with HTTP protocols, including handling various HTTP methods (GET, POST) and parsing request headers with precision.*

Course Projects

- *Engineered and coded a self-balancing robot utilizing Arduino UNO, motor drivers, and gyroscope sensors, showcasing expertise in hardware integration and control system implementation.* — *Robotics*

Key Skills

- **Programming Languages:** *C/C++, Python, HTML, Javascript*
- **Tools:** *Git and Github, Vercel, Postman, Linux, Docker, Azure*
- **Framework/Libraries:** *Tailwind CSS, React.js, Node.js, Express.js, MongoDB, Tensorflow*

Position of Responsibility

Core Team — *(May 2021 - present)*
Team 3D, Alma Fiesta, IIT Bhubaneswar
- *Directed video production activities for the cultural fest, utilizing Adobe Premiere Pro and After Effects to edit engaging content, thereby enhancing event promotion and documentation.*
- *Supervised a team of associates in campus decoration endeavors, orchestrating creative designs and installations to elevate the ambience and thematic allure of the festivity.*

Extra-Curricular Activities

- *Gold level Research Consultant at Worldquant Brain.*
- *Secured first position in Data Detective, a prestigious data analysis competition organized by Wissenaire of IIT Bhubaneswar, showcasing strong analytical skills and problem-solving abilities.*
- *Member of Produit, a product development society, and Cinewave, a cinematic society, actively contributing to innovative projects and fostering a culture of creativity and entrepreneurship.*