

Ritesh Saha

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Summary

Proactive and experienced Full Stack Developer with a passion for solving complicated problems and building user-friendly, scalable, and secure applications. I am proficient in designing and developing APIs and databases that meet business requirements. I enjoy competitive programming and learning about new data structures and algorithms. Always eager to embrace new skills and technologies to drive innovation and improve my problem solving skills.

Profile

- [Github](#)
 - [Linkedin](#)
 - [Leetcode](#)
 - [HackerRank](#)
 - [Portfolio](#)
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Experience

Junior Full Stack Developer

EnableCap • Kolkata, West Bengal

06/2022 - 06/2023

- Made significant contributions to the development of the Loan Management System (LMS) and Loan Origination System (LOS).
- Designed and implemented the RESTful APIs for the LMS responsible for data uploading/manipulating, loan lifecycle management, report generation, and analytics.
- Created APIs for the LOS to accept and store loan applications. Worked on a WhatsApp chatbot to act as a conversational form. Implemented multipage forms using HTML, CSS, and JavaScript.
- Designed and Implemented a user/role management system into the LMS, ensuring secure access and streamlined workflows. The system also maintained a log of all user activities and background tasks.
- Partnered with other companies for co-lending purposes, providing them with APIs to integrate with our LMS.
- Collaborated with the financial and operations team to understand the business requirements and devised software solutions catering to their specific needs.
- Contributed to the development of the user interface of the LMS using HTML, CSS, and JavaScript. I leveraged technologies such as DataTables, Alertify, Chart.js, and SweetAlerts to enhance the functionality of the UI.
- Created efficient background tasks using Redis and Celery for computing various loan metrics, such as overdue, outstanding, XIRR, IRR, days past due, interest margin, and other loan metrics.

Key accomplishments:

- Set up server-side processing for DataTables, incorporating features like pagination, universal search, individual search, column sorting, and data export in XLSX, CSV, and PDF formats. I also implemented the server side processing of the search builder feature using a depth-first search algorithm, widely utilized in the project for simplified data filtering.
 - Optimized the loan metrics calculation process. Significantly reducing the time to calculate various loan metrics and generating reports. This facilitated the operations and financial teams in swiftly producing loan performance reports within a matter of minutes. Furthermore, credit reports for an entire year could be generated in under an hour, a process that would otherwise have extended over several days.
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Skills

Proficient in data structures and algorithms, working with and designing relational databases, and building user interfaces. Always willing to learn new skills and technologies.

Backend Development: Python, C, C++, Java, Golang

- **Backend Frameworks & Libraries:** Django, Flask, Celery, Django Rest Framework, Flask Restful, Beautifulsoup4, Knox authentication, Numpy, Pandas, Numba, Plotly, SQLAlchemy, Django OAuth toolkit

Database: MySQL, PostgreSQL, MongoDB, SQLite3

- **Database Skills:** Temporary Relationships, Relational Algebra, Normalization, Database Design, Query Optimizations

Frontend: HTML, CSS, Javascript, Ajax, JQuery

- **Frontend Libraries:** DataTables, Chart.js, SweetAlerts, Alertify, JQuery

Server and Deployment:

- **Web Servers:** Nginx
- **Application Servers:** Gunicorn
- **Caching:** Redis
- **Operating Systems:** Linux
- **Cloud Services:** Amazon Web Services (AWS), E2ENetworks

Other tools: Git, Visual Studio, JIRA

Certifications

- Rest API (Intermediate) ([HackerRank](#))
 - Algorithms for Searching, Sorting, and Indexing ([Coursera](#))
 - Trees and Graphs: Basics ([Coursera](#))
 - Dynamic Programming, Greedy Algorithms ([Coursera](#))
 - Data Science Foundations: Data Structures and Algorithms ([Coursera](#))
 - Mathematics for Machine Learning: Linear Algebra ([Coursera](#))
 - Mathematics for Machine Learning: Multivariate Calculus ([Coursera](#))
 - Programming in Java ([NPTEL](#))
 - Programming, Data Structures And Algorithms Using Python ([NPTEL](#))
 - Data Structures and Algorithms: Deep Dive Using Java ([Udemy](#))
 - Rest API (Intermediate) ([HackerRank](#))
 - Problem Solving (Intermediate) ([HackerRank](#))
 - Problem Solving (Basic) ([HackerRank](#))
 - SQL (Advanced) ([HackerRank](#))
 - SQL (Intermediate) ([HackerRank](#))
 - SQL (Basic) ([HackerRank](#))
 - Python (Basic) ([HackerRank](#))
 - JavaScript (Intermediate) ([HackerRank](#))
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Personal Projects

Kizlarsoruyor Web Scrapper ([Code](#)):

- The project's goal is to retrieve all discussions relevant to a particular keyword from the Kizlarsoruyor website. Additionally, it aims to gather various attributes associated with each discussion thread, such as the date of posting, comments, and the gender of commenters. The code is designed to extract this information and present it in JSON format as the output.
- The project required understanding how the website is structured, how it handles pagination, and how it handles authentication. This information was then used, along with tools like BeautifulSoup4, to extract all the relevant

data from the website.

- Here's a [video](#) that provides an overview of the project.

Mobile Factory REST API ([Code](#)):

- Flask REST API project for configuring and ordering mobile devices, developed using Flask and Flask-RESTful. This project showcases a comprehensive understanding of RESTful APIs and the implementation of robust unit tests to ensure the reliability and functionality of the backend code.
- A particularly robust testing method involves exploring all possible combinations of mobile components using itertools. This ensures that the API can handle various configurations and maintains the integrity of order creation.

Trading/Portfolio Management Web App ([Code](#)):

- A full stack web application built with Flask, SQLite3, Ajax, Plotly, and Yahoo Finance that allows users to quote various stocks and manage their portfolio. This web app also estimates future trends of a stock.
- The front end of the application is built with HTML, CSS, and JavaScript. The back end of the application is built with Flask, SQLite3, Ajax, Plotly, and Yahoo Finance.
- The application allows users to quote various stocks by entering the stock symbol into a search bar. The application then retrieves the current price of the stock from Yahoo Finance and displays it on the screen.
- The application also allows users to manage their portfolio by creating and editing a list of stocks. The application tracks the current price of each stock in the portfolio and displays the total value of the portfolio.
- The application also estimates future trends of a stock by using a machine learning algorithm to analyze historical data. The algorithm uses the IEXCloud and Yahoo Finance APIs to fetch stock data, and then uses FBProphet to predict the future price of the stock.

Blogging Web Application ([Code](#)):

- This is a full-featured web application built with the Flask framework. It allows users to create and read blog posts. The front-end of the application was built with HTML, CSS, and JavaScript, while the back-end was built with Flask and SQLite3. The main goal of this project was to improve my understanding of the Flask framework.

Data Structures and Algorithms template library ([Code](#)):

- In this project, I developed my own template library of classical data structures and algorithms in C++. The library includes template classes for heaps, tries, sorting algorithms like quick, insertion, and merge sort, and some miscellaneous algorithms. The main goal of this project was to gain a deep understanding of data structures and algorithms, as well as to improve my problem-solving skills. The project can be viewed on my GitHub.

Trees and Graphs ([Code](#)):

- Exploring the implementation of tree and graph algorithms in Python, with a focus on their applications. The algorithms that were explored include breadth-first search (BFS), depth-first search (DFS), union find, and the Kruskals algorithm.

Responsive web pages ([Demos](#), [Codes](#)):

- A collection of web pages that are responsive to different screen sizes and are written using only HTML, CSS, and JavaScript. The demos and code for these pages can be found on my portfolio.

Numerical analysis ([Code](#)):

- This project implements various numerical methods for finding roots and interpolation, including Newton-Raphson, bisection, regula falsi, and Newton forward interpolation. It uses C for heavy computations and Python for I/O and threading. The Python CDLL module allows the use of precompiled C code in Python.

Stock-Trend-Prediction ([Code](#)):

- A minor project where I use yfinance and TensorFlow to predict stock trends.

Spell Checker ([Code](#)):

- I developed a spell checker by implementing a trie data structure in the C programming language. A trie is a tree-like data structure that is well-suited for storing and searching for words. In my implementation, each node in the trie represents a single character of a word, and the path from the root of the trie to a leaf node represents a complete word in the dictionary. This data structure allows me to efficiently search for words in the dictionary and to suggest corrections for misspelled words.
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Education

Bachelor Of Computer Application: B.C.A(Hons)

University of North Bengal • Siliguri, West Bengal

07/2022

CGPA: 9.18

Relevant Courses: Discrete Mathematics, Graph Theory, Probability Theory, Linear Algebra, Automata Theory, Data Structures and Algorithms, Design and analysis of algorithms, Digital Electronics. Computer System Architecture, Data Science, DBMS

I.S.C

Emmanuel English School • Malda, West Bengal

05/2019

Grade: 85.4%

Subjects: Physics, Chemistry, Biology, Computer Science, English, Hindi

I.C.S.E

Emmanuel English School • Malda, West Bengal

05/2017

Grade: 88.8%

Subjects: Mathematics, Physics, Chemistry. Biology, Computer Applications, English, Hindi

Extracurricular activities

National Cadet Corps

Achievements:

- 'A' certificate
- Participated in Combined Annual Training Camps

International / National Science Olympiads

Achievements:

- State rank 83 in iTHO 2016 (Silverzone)
- State rank 140 in iTHO 2015 (Silverzone)
- City rank 26 in 19th NSO (Science Olympiad Foundation)

Kickboxing

Achievements:

- 2nd West Bengal State Inter-School Kickboxing Championship Jan 2016 (Bronze medal)
 - District Inter-School Kickboxing Championship Oct 2016 (Bronze medal)
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Languages

English: Full Professional Proficiency

Hindi: Native Language Proficiency

Interested in

Competitive Programming, Data Science, Gaming, Calisthenics, Swimming, Reading
