RAGUL RAVI

PERSONAL DETAILS

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SUMMARY

A dedicated undergraduate student pursuing a Bachelor of Engineering in Computer Science Engineering with a specialization in Cyber Security. Passionate about leveraging programming and problem-solving skills to develop innovative solutions.

TECHNICAL SKILLS

- Programming Languages: Java, C
- IDE/Software - Intellij IDE, Pycharm, Visual Studio Code
- Programming Paradigms: Object-Oriented Programming (OOP), Data Structures & Algorithms

PROJECTS

CipherTalk – Web-Based Application

A secure communication platform implementing:
- AES Encryption: Provides secure text encryption and decryption for private messaging.
- Image Steganography: Enables users to hide messages within images and decrypt them using a secure passkey.
- Technologies Used: Java, AES algorithms, and custom steganography techniques.
- Outcome: Enhanced user privacy and data security through advanced encryption techniques.

Big Number Calculator – Web-Based Application (In Development)

- Developed a high-performance big number calculator with support for prime number operations, arithmetic calculations, and number theory functions.
- Implemented efficient algorithms to handle large integer operations, ensuring fast computation speeds.
- Optimized Prime Generation using the Sieve of Eratosthenes to achieve $O(n \log \log n)$ complexity.
- Integrated Miller-Rabin Primality Test for efficient probabilistic prime checking on large numbers.
- Developed Karatsuba Multiplication for big number operations, reducing complexity to $O(n^{1.58})$.
- Implemented Euclidean Algorithm for GCD calculations with $O(\log \min(a, b))$ time complexity.
- Optimized Exponentiation by Squaring for fast power calculations in $O(\log b)$ time.
- Implemented Pollard's Rho Algorithm for prime factorization, enabling faster factor extraction.
- Utilized Modular Arithmetic techniques for modulo operations and modular exponentiation.
- Designed a user-friendly web interface to provide a smooth experience for performing complex calculations.

EDUCATION

Bachelor of Engineering in Computer Science Engineering (Cyber Security)   **2023 - Present**

Saveetha Engineering College, Chennai
- Specialization in Cyber Security.
- Expected Graduation: 2026

ADDITIONAL INFORMATION

- **Languages:** English, Tamil.
- **Certifications:** MongoDB Basics - **ICT Academy Learnathon**, UX Design for Web Developers - **Infosys**, Java (Basic) - **HackerRank**
- **Hobbies** : Solving aptitude problems to improve logical thinking and analytical skills.