

Adwitya Chakraborty

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Education

Banasthali Vidyapith 2022 – 2026

B.Tech in Computer Science

- CGPA: 7.24/10
- **Coursework:** Database Management Systems, Operating System, Object Oriented Programming

M.V.N Aravali Hills 2021 – 2022

CBSE

- Grade: 68%

Experience

Research Intern July 2025 – Present

Scientific Analysis Group (SAG), DRDO

- Developed and implemented **Artificial Neural Network (ANN)** and **1-D Convolutional Neural Network (CNN)** models to classify ciphertexts from the **LED block cipher** based on S-box variations.
- Converted **64-bit ciphertext blocks** into structured binary features, enabling effective ANN/CNN model input representation.

Projects

Disease Subtype Classification for Breast Cancer Detection [🔗](#) April 2024 – May 2025

- Developed a **Flask web application** for live model evaluation, displaying **EDA** visuals, **SMOTE** impact charts, convergence curves, and performance metrics dynamically using **JavaScript** and **Matplotlib**.
- Achieved classification accuracy up to **99.75%**, F1-score of **0.9975**, and ROC AUC of **1.00** using SMA-selected features with Random Forest on the "vital.status" binary outcome.

Rate Limiter Service [🔗](#) July 2025

- Architected and implemented a distributed **Redis-based rate limiter service** in **Go** processing **1000+** requests/second with sub-**20ms** response times, supporting **99.9%** accuracy through sliding window log algorithms with nanosecond precision across multiple application instances
- Built comprehensive **Redis** integration layer with **15+** custom interfaces supporting 3 identification strategies (IP, token, custom headers), enabling horizontal scaling across 5+ application instances with shared rate limit state and **99.95%** uptime

Activities and Achievements

- Secured a position in the **Top 100** contributors in Social Summer of Code 2025.
- Achieved **Top 30** (Semifinalist) position in Python Quiz Competition conducted by Knowledge Institute of Technology.
- Contributed to open source with **13 merged pull requests** (**6 in GirlScript Summer of Code**, **3 in Social Winter of Code**, **4 in Social Summer of Code**) accepted on GitHub.
- Secured **2nd** rank in "Sahitya Ke Rang" (3rd National Level Online Poetry and Essay Writing Competition) organized by the HULAHUL Foundation.

Skills

Programming Languages: Python, Golang, C++, C, Java, Bash, HTML5, CSS3, JavaScript

Databases: SQL, MongoDB, Redis

Tools/Technologies: Git, Postman, VS Code, Windows Subsystem for Linux, Kali Linux