

Soumyadeep Banerjee

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Education

Master of Computer Applications (MCA)

University of Kalyani | Score: 8.56 CGPA or 81.04% | July 2025

Bachelor of Science (Honours) in Computer Science

West Bengal State University | Score: 9.69 CGPA or 85.35% | Aug 2023

ISC Class 12th (Science)

Score: 82.75% | Aug 2020

ICSE Class 10th

Score: 90.2% | May 2018

Skills

Java, C#, SQL (MS SQL Server, MySQL), HTML, ASP.NET 4.8, Git, Word, PowerPoint

Projects

[View all projects at soumyadeepb2001.github.io/software_projects]

Microloom: A Social Media Web Application

- Developed using **ASP.NET 4.8, C#, HTML, CSS, JavaScript, Bootstrap** and **MS SQL Server**.
 - Implemented **authentication** and **authorization** via cookies; used **OTP verification** for password resets.
 - Enabled **post creation, reactions (likes and dislikes), sharing, and commenting**.
 - Integrated **real-time messaging** with **SignalR** and built a **notification** system for user interactions.
 - Designed a profile system allowing users to **edit** profiles, **upload** profile pictures, and **view** interaction history.
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Hotel Management System and Hotel Booking Website

- Developed using **ASP.NET 4.8**.
 - Implemented **secure user authentication** using **OTP**.
 - Designed an intuitive interface for **hotel staff** to **manage operations** and for **guests** to streamline **bookings**.
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Java Swing-Based 2D Games

- Built games like **Block Breaker, Match the Tiles, Minesweeper, Eight Puzzle** and **Dodge the Obstacles**.
 - Implemented **collision detection, game-over** logic, **responsive** controls and used **A*** and **Minimax** algorithms.
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Huffman Encoder and Decoder

- Developed a Java app to compress and decompress files using **Huffman encoding and Huffman Trees**.
 - Built Huffman encoder and decoder using a **frequency-sorted Huffman tree**. Creates a custom **.huff** file.
 - Handled **file extension preservation** and **lexicographically** sorted frequency tables for **accurate** restoration.
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Image and Audio Steganography Tool

- Built a Java GUI app for **LSB steganography** to hide **encrypted text** in **PNG** and **WAV** files.
- Used **Caesar cipher** with a **user-defined shift** value; embedded cipher key within hidden data.
- Applied **OOP** principles to encode data into **RGB pixel** values and the **least significant bit** of the **least significant byte** in **WAV** audio samples, with support for **Little Endian** format.
- Implemented custom decoding logic for accurate **extraction** and **decryption** from **image** and **audio** files.