

# Nilashis Saha

Swami Vivekananda Road, Champadali More, Barasat  
Phone: +91 7980884737 — Email: nilashis37@gmail.com  
GitHub: github.com/afirmae — LinkedIn: linkedin.com/in/nilashis-saha  
Portfolio: nilashis.in — Resume: nilashis.in/resume

## Objective

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Full-stack software engineer dedicated to building scalable systems and intelligent solutions. Experienced in leveraging secure authentication mechanisms, database optimization, and emerging technologies. Committed to delivering robust, user-centric applications through clean code, performance optimization, and advanced system design principles while advancing innovative technology practices.

## Education

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| <b>Bachelor of Technology in Computer Science and Engineering</b><br><i>Adamas University, Kolkata, West Bengal</i> | <i>2022 – Present (Expected 2026)</i><br>CGPA: 9.17 / 10 |
| <b>Senior Secondary Education</b><br><i>Kalyani Public School, Barasat, West Bengal</i>                             | <i>2019 – 2021</i><br>Percentage: 82.60%                 |
| <b>Secondary Education</b><br><i>Douglas Memorial Higher Secondary School, Barrackpore, West Bengal</i>             | <i>2013 – 2019</i><br>Percentage: 90%                    |

## Technical Skills

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- **Frontend:** HTML5, CSS3, JavaScript (ES6+), React, React Native, Tailwind CSS
- **Backend:** Laravel, Flask, Node.js, Express.js, REST APIs
- **Databases:** MySQL, MongoDB
- **Languages:** Python, PHP, Java, JavaScript, SQL
- **DevOps & Tools:** Docker, GitHub Actions, Google Cloud Console, Git, GitHub
- **Additional:** Authentication (JWT & OAuth 2.0), Image Processing, Web Scrapping (Selenium)

## Experience

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- Full-Stack Development Intern – VLED Lab, IIT Ropar** *Jan 2026 – Mar 2026*
- Developing full-stack MERN applications using React, Express.js, MongoDB, and TypeScript under Prof. Sudarshan Iyengar's mentorship.
  - Solving structured case studies that bridge theory and industry-standard development practices in a research-driven environment.
  - Contributing to real-world projects alongside the VLED Lab development team, building portfolio-worthy features that reflect production-level workflows and best practices.
- Software Development Intern – Department of CSE, Adamas University** *May 2025 – Jan 2026*
- Built a PhD Progress Tracker System to manage doctoral students' milestones, automating progress notifications.
  - Developed PBAS (Performance-Based Appraisal System) to streamline faculty evaluation, reducing manual work.
  - Implemented role-based access control and interactive dashboards, improving usability for 25+ faculty members.
- Cybersecurity Research Intern – University College Cork (UCC), Ireland** *Jun 2025 – Sep 2025*
- Developed a Flask web application for DICOM medical image viewing and processing data with secure upload and visualization features.
  - Implemented AES-256 encryption with randomization techniques (random IVs, salts, padding) to prevent side-channel attacks and protect sensitive patient data during storage and transmission.
  - Conducted security testing to identify timing-based vulnerabilities, implementing countermeasures including constant-time operations and random delays to prevent key-recovery attacks.
- Software Development Intern – KATSI Canada, Toronto** *Aug 2024 – Apr 2025*
- Co-developed an OFAC List Checking Web App using PHP & MySQL, improving compliance checking speed.
  - Created system diagrams using Visual Paradigm and Figma for accurate project planning as per system flow.
  - Conducted manual test cases to ensure zero critical bugs and deployed the website on Hostinger.
- Junior Research Collaborator – The Future Network, Kolkata** *Sep 2023 – Apr 2024*
- Built backend scripts in PHP to store real-time eye-tracking data into MySQL for research analysis.
  - Developed frontend dashboard using HTML, enabling visualization of tracking data for experiments.

## Projects

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### Delivery Hub – Peer-to-Peer Logistics Platform

- Built a comprehensive logistics backend in Node.js + Express + MySQL, featuring role-based dashboards for Senders and Delivery Partners using React Native.
- Engineered a robust Automated Testing Suite using Jest & Supertest, achieving high test coverage for authentication and order management flows.
- Designed 20+ manual test cases and API validation scripts (Postman), simulating real-world edge cases like race conditions and network failures.

### Student Portal – Full-Stack Web Application

- Developed a student information system in PHP + Tailwind CSS + MySQL, used by 1,500+ students.
- Created Admin Dashboard for 25+ faculty members to track student attendance, progress, and academic data.
- Implemented secure authentication, real-time updates, and responsive design across desktop & mobile.

### University Research Portal – PhD Progress Tracker

- Developed a comprehensive system for PhD scholars to track research progress, upload publications, and manage IP records using Laravel + MySQL.
- Created an administration portal for faculty verification and approval workflows with secure access control.

### Scribe – Real-time Chat Application

- Built a real-time messaging platform using Python (Flask) + Socket.io, enabling instant communication across multiple chat rooms.
- Implemented persistent message storage with MongoDB, ensuring chat history is preserved across sessions.
- Designed a responsive, user-friendly interface with Tailwind CSS that supports up to 5 concurrent users per room.

### Reddit Clone – Social Media Platform

- Built a full-stack Reddit clone with Node.js + Express + MongoDB featuring post creation, image uploads, and up-vote/downvote functionality.
- Implemented threaded commenting system with nested replies and real-time interaction tracking.
- Automated end-to-end testing using Selenium to validate user interactions, form submissions, and post and comment management workflows.

## Certifications

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- Introduction to Algorithms and Analysis – NPTEL (Nov 2025)
- Problem Solving Through Programming in C – NPTEL (May 2024)
- The Joy of Computing Using Python – NPTEL (Nov 2024)
- Digital Transformation with Google Cloud – Google (Nov 2023)
- Infrastructure and Application Modernization with Google Cloud – Google (Nov 2023)
- Innovating with Data and Google Cloud – Google (Nov 2023)
- Understanding Google Cloud Security and Operations – Google (Nov 2023)
- Programming with Python – upGrad (Jul 2023)
- Artificial Intelligence in Real World – upGrad (May 2023)
- Introduction to Programming Using Python – Programming Hub (Jul 2023)