

TIRTHANKAR CHATTERJEE

Computer Science Student • Software Developer • Problem Solver

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PROFILE

Computer Science student with a strong foundation in programming, software development, and core computer science concepts. Hands-on learning across Java, C, Python, JavaScript, Flutter/Dart, Shell scripting, web development, databases, operating systems, computer networks, theory of computation, and 8085 microprocessors. Interested in building practical software, solving programming problems, and continuously strengthening both theoretical and engineering skills.

TECHNICAL SKILLS

Programming	Java, C, Python, JavaScript, Dart, Shell Scripting
Web Development	HTML5, CSS3, JavaScript, Responsive Web Design, UI Animation
Mobile Development	Flutter, Dart
Database	DBMS concepts, SQL, MySQL, relational database fundamentals
Computer Science	Data Structures & Algorithms, OOP, Operating Systems, Computer Architecture, Microprocessors
Networking	Data Communication & Networking, OSI/TCP-IP concepts, network devices, protocols, addressing fundamentals
Theory	Theory of Computation, automata, formal languages, grammars, computability fundamentals
Tools & Platforms	Git, GitHub, Linux, VS Code

CORE COMPUTER SCIENCE KNOWLEDGE

- **Data Communication & Networking:** OSI and TCP/IP models, network topologies, transmission media, switching concepts, networking devices, addressing fundamentals, common protocols, error and flow control concepts.
- **Theory of Computation:** finite automata, regular languages and expressions, context-free grammars, pushdown automata, Turing machines, decidability and computability fundamentals.
- **DBMS:** relational model, keys, constraints, normalization, SQL, joins, transactions, ACID properties, indexing fundamentals, database design concepts.
- **Operating Systems:** processes and threads, process states, scheduling, synchronization, semaphores, deadlocks, memory and file-system fundamentals, shell interaction.
- **Computer Architecture & Microprocessors:** CPU organization, registers, instruction cycles, interrupts, 8085 architecture, addressing modes and assembly programming.
- **Programming & Problem Solving:** algorithms, data structures, object-oriented programming, exception handling, debugging, numerical methods and algorithmic reasoning.

PROJECTS & PRACTICAL WORK

Personal Portfolio Website

Designed and developed a premium, responsive personal portfolio concept with modern typography, dark luxury styling, animations, project showcases, interactive navigation, and a developer-focused presentation.

Flutter Applications

Built multiple practice applications including calculator, salary calculator, login/validation interfaces, tourist app, clock, to-do, stopwatch, animation, and temperature-conversion applications.

Java OOP Programs

Implemented academic programs covering classes and objects, constructors, inheritance, polymorphism, method overloading, interfaces, abstract classes, enums, exception handling, custom exceptions, autoboxing and unboxing.

Python Utilities & Programs

Worked with Python for programming practice and utility-oriented tasks, including string/data processing, numerical methods, and library-based experiments.

Shell Scripting

Created and debugged Linux shell scripts for file processing, word/line/character counting, sorting, Fibonacci and Armstrong numbers, patterns, array operations, and command-line automation.

8085 Microprocessor Programs

Developed and analyzed 8085 assembly programs for arithmetic operations, arrays, bit manipulation, palindrome/reversal logic, BCD and Gray-code conversions, Fibonacci/series problems, and interrupt concepts.

Numerical Methods

Implemented and studied numerical techniques including Euler method, Newton-Raphson, interpolation/extrapolation, error analysis, and numerical integration concepts.

EDUCATION

Graduation(Running): Bachelor of Science in Computer Science.
Undergraduate Student • University of Calcutta • 2024-2028

10th (2022) & 12th (2024) : Rampurhat Jitendralal Vidyabhaban.

RELEVANT COURSEWORK

Data Structures & Algorithms • Object-Oriented Programming • Python Programming • Database Management Systems • Data Communication & Networking • Theory of Computation • Operating Systems • Computer Architecture • Microprocessors & 8085 • Numerical Methods • Web Development • Software Development Fundamentals

STRENGTHS

Problem Solving • Debugging • Logical Thinking • Continuous Learning • Attention to Detail • Practical Implementation • Adaptability

INTERESTS

Software Development • Web & Mobile Applications • Computer Systems • Programming • UI/UX • Open-Source Learning Technology.

