

Arindam Hore

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SKILLS

- Languages C (Primary), C++20, Go, SQL
- Systems & Concurrency POSIX APIs, Threads, TCP/IP, Socket Programming
- Toolchain & Platform GNU/Linux, CMake, GCC/Clang, Git
- Performance & Debugging GDB, Valgrind, perf, strace
- Soft Skills Clear Communication, Team Collaboration, Leadership, Ownership & Accountability

EXPERIENCE

- **The Document Foundation - LibreOffice** Remote
Code Contributor (Part-time) Sep 2025 - Nov 2025
 - Modernized SAL/UNO C++ internals using safer enums, OUString corrections, and type-safe refactors; delivered 12+ patches via Gerrit.
 - Resolved critical Writer and Calc defects by eliminating unsafe casts, correcting `sal_uLong` misuse, and tightening string/memory handling in performance-sensitive paths.
 - Contributed within a 10M+ LOC codebase under multi-stage CI and Gerrit review cycles alongside senior maintainers.
- **ITC Paperboards & Specialty Papers Division** Kolkata, West Bengal
R&D Engineering Trainee (Apprenticeship) Jun 2025 - Jul 2025
 - Explored anomaly detection over live industrial sensor streams (temperature, pressure, moisture, flow) for predictive maintenance pilot evaluation.
 - Validated structured-light and UV-reflectance inspection achieving 20–40 μm resolution for surface defect detection.
 - Supported deployment of operator-assist reporting automation across production shift stations.

PROJECTS

- **Custom Memory Allocator** Mar 2026
C, Linux, Systems Programming Link: github.com/horearindam/malloc
 - Implemented a malloc/free allocator using a free-list based heap manager to track allocated and free memory blocks.
 - Added block splitting and coalescing to reduce fragmentation, and expanded the heap using `sbrk()` / `mmap()`.
 - Explored heap metadata layout, alignment constraints, and fragmentation behavior in dynamic memory allocation.
- **Concurrent Thread Pool Executor** Dec 2025
C, POSIX Threads (pthreads) Link: github.com/horearindam/thread-pool
 - Built a fixed-size worker thread pool using POSIX threads to execute submitted tasks concurrently.
 - Designed a mutex- and condition-variable-synchronized task queue for producer-consumer coordination.
 - Explored thread lifecycle management, synchronization primitives, and task scheduling in concurrent systems.
- **HTTP Web Server** Oct 2025
C, POSIX Sockets, TCP/IP Link: github.com/horearindam/http-server
 - Built a basic HTTP server using POSIX socket APIs (`socket`, `bind`, `listen`, `accept`) to handle TCP connections.
 - Parsed HTTP requests and served static files to clients over raw TCP sockets.
 - Applied TCP connection handling and client-server request/response flow concepts.
- **Minimal UNIX Shell** Apr 2025
C, POSIX, Linux Link: github.com/horearindam/unix-shell
 - Implemented a command-line shell that parses user input and executes programs using `fork()`, `execvp()`, and `waitpid()`.
 - Managed process execution and I/O through POSIX system calls and UNIX file descriptors.
 - Explored process creation, parent-child relationships, and the UNIX process lifecycle.
- **Simple Database Engine** Feb 2025
C, Storage Systems, Data Structures Link: github.com/horearindam/db-engine
 - Built a small disk-backed database supporting row storage and basic table operations.
 - Implemented B-tree indexing to support efficient record insertion and lookup.
 - Designed page-based storage layout and row serialization for persistent data management.

COURSEWORK & CERTIFICATIONS

- Distributed Systems (MIT 6.824) Oct 2025
- Computer Communications Specialization – University of Colorado Mar 2025
- Operating Systems – IIT Bombay (NPTEL) Jan 2025
- Algorithms, Part I & II – Princeton Sep 2024

EDUCATION

Lovely Professional University Jalandhar, India
Bachelor of Technology - Computer Science & Engineering; GPA: 8.64 Since Aug 2023
Courses: Operating Systems, Analysis of Algorithms, Data Structures, Artificial Intelligence, Compiler Theory, Networking, Databases