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github.com/rozmar1n

Education

MIPT (Moscow Institute of Physics and Technology), DREC (2024 — present)

- Major: Applied Mathematics and Physics
- GPA: 7.29 / 10

Additional Training

“System Programming and Compiler Technologies” (Huawei) — 1 semester

VK Education: “System Programming” — in progress

MIPT iLab C++ Course — in progress

Skills

Programming: C, C++, Python (scripting), Bash, \LaTeX

Tools & Technologies: Git, Make, CMake, GTest, GitHub CI, Linux, POSIX API, SQLite

Languages: Russian (native), English (A2–B1)

Projects

Shell Emulator (`Shell_emulator`) — C, Linux, POSIX

- Mini-Bash with pipes, redirections, logical operators, and background jobs.
- Uses `fork/exec`, `dup2`, signals, and zombie reaping.

Coroutine Message Bus (`Coroutine_messaging_system`) — C

- Message queue and cooperative coroutine scheduler (state machine, no threads).

Red–Black Tree (RB-tree) (`RB-tree`) — C++, GTest, CMake, RAII

- Insert/delete, rotations, and invariant restoration; focus on pointers and balancing.

Cache Algorithms: LRU and LIRS (`cache_task`) — C++, GTest, CMake

- OS-level cache modeling: LRU and improved LIRS; tests (GTest) and CI (GitHub Actions).

Sea Battle — networked Battleship (`Sea_battle`) — C, libuv, SQLite, ncurses

- Client–server game: asynchronous UDP server on **libuv** (event loop, timers, non-blocking I/O).
- Player accounts and stats stored in **SQLite** (`users_info.db`); TUI client built with **ncurses**.
- Custom protocol: game states, connection handling, turn transmission and hit validation.

Differentiator — symbolic differentiation (`Differentiator`) — C/C++, Graphviz

- AST parser, expression simplification, derivative computation; graph visualization via Graphviz.