Julia Łucyn

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Education

University of Warsaw, BSc in Computer Science   Oct 2023 – Present
Relevant Coursework: *Computer Networks, Concurrent programming, Object-oriented programming, Python programming, Databases, Computer architecture and operating systems, Geometry with linear algebra*

Projects

Peer-to-Peer Network Clock Synchronization Protocol | *Language: C*   Github
- Developed a distributed, peer-to-peer clock-synchronization protocol in **C** leveraging UDP/IPv4 sockets to coordinate time across network nodes without a centralal authority.
- Engineered leader election, round-trip delay estimation, and logical-clock alignment algorithms that converge on consistent network time under packet loss and variable latency.
- Strengthened robustness with timeout-based retransmissions and defensive packet parsing.

Multithreaded Combinatorial Hypothesis Verification | *Language: C*   Github
- Re-engineered a recursive combinatorial verifier into a **multithreaded C** implementation, partitioning search space across shared-memory work queues and leveraging POSIX threads.
- Delivered 14× runtime reduction (30 s $\rightarrow$ 2 s) with near-linear scaling to 16 cores.

NAND Gates Simulation | *Language: C*   Github
- Engineered a **dynamically loadable C library** modeling combinational logic using only NAND gates, with a function-level interface for gate creation, signal wiring, evaluation of critical path length, and memory-safe teardown.
- Developed a recursive, memoized depth-first algorithm to compute critical path length in logic circuits, minimizing redundant traversal and ensuring efficient evaluation.

Experience

Waymo x Formation | Software Engineering Fellow | Remote   July 2025 – Present
- Selected as 1 of only 10 students in Poland for the Waymo × Formation Software Engineering Program.
- Developed and optimized over 100 algorithms and data structures, consistently meeting performance benchmarks for time and space complexity.

Bachelor's Thesis Student | Laboratory of RNA Biology, IICMB | Warsaw, Poland   July 2025 – Present
- Architecting a modular Python extension to automate bioinformatics workflows, projected to enable support for novel data formats and to reduce RNA analysis processing time.

IMDiK | Intern | Warsaw, Poland   Oct 2024 – June 2025
- Collaborated with a cross-disciplinary research team to advance a biotechnology project.
- Authored detailed electronic lab notebooks and standardized protocols, ensuring end-to-end experimental reproducibility and accelerating manuscript submission timelines.

Achievements and Activities

Finalist of Mathematical Linguistic Olympiad   April 2023
- Ranked Top 100 of 3,500+ participants (top 3%) in the national Mathematical Linguistic Olympiad
- Applied combinatorial optimization and logical reasoning to solve multi-step linguistic puzzles with zero prior language exposure, validating rapid problem decomposition and analytical skills critical to algorithm design.

Student Scientific Leadership & Event Management | *University of Warsaw*   Oct 2023 - Present
- Elected President, Medical Biology Scientific Club 'Antidotum' at University of Warsaw. Grew active membership by 15+ students while overseeing strategic planning, budgeting, and day-to-day operations.
- Main Organizer of 'Biofuzje' International Scientific Conference - a multi-day academic event that attracted ∼200 participants; managed program design, logistics, budgeting, sponsor acquisition, and speaker relations.

Skills

Languages: C, Python, Java, SQL, Bash, R, HTML/CSS
Technologies: Git, Valgrind, GDB, LaTeX
Libraries/APIs: POSIX Threads (pthreads), UDP/IP Sockets