

Daniel Gehrman

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EDUCATION

Novosibirsk State University, Department of Mathematics and Mechanics

September 2022 — June 2023

Novosibirsk State University, Computer Science

September 2023 — June 2027

- Bachelors in Computer Science (department of Mechatronics and Robotics).
- Anticipated graduation June 2027.

PROJECT EXPERIENCE

PONG Emulator

Group Project

Digital Systems & Architecture Course

January 2024 — June 2024

- Designed and implemented a low-level emulator of the original PONG game using Logisim and a custom-built CdM8 8-bit CPU architecture. The project was developed under strict hardware-level constraints, including limited registers, no native multiplication/division, and memory-mapped I/O.
- Developed assembly-level code to handle paddle movement, ball physics, collision detection, and basic game logic. Created a "bot" opponent optimized to function within a limited instruction set and minimal clock cycles.
- Successfully completed a fully functional two-player PONG game running on the emulated CPU within the Logisim environment. Final grade: A.
- Source code available on GitHub: <https://github.com/LessVegetables/ping-pong>

GameOfLife

Individual Project

Declarative Programming Course

January 2024 — June 2024

- Developed a graphical simulation of Conway's Game of Life entirely in C using the Raylib graphics library. Focused on the UI, clean memory management, grid-based logic, and efficient rendering to support real-time updates of large cell arrays.
- Implemented custom data structures to track generations, user interaction controls (pause, reset, step, color), and an intuitive interface. Emphasized performance and responsiveness.
- Produced a polished, interactive simulation with a clean UI and responsive controls. Final grade: A.
- Source code available on GitHub: <https://github.com/LessVegetables/game-of-life>

ChatTutor Telegram Bot

Individual Project

Personal Project

Spring 2025

- Designed and developed a Telegram chatbot to support language learners through natural conversation practice. Built entirely in Python with asynchronous programming and PostgreSQL, the bot engages users in realistic dialogue while storing interaction data for continuous improvement.
- Implemented multilingual support using gettext for localization, and integrated OpenAI's API to generate dynamic, tutor-like responses. The bot features clean onboarding, intuitive UX, and a scalable backend architecture capable of handling concurrent user sessions.
- Planned and designed a roadmap with future enhancements including tutor personalities, media input (stickers, voice, video), and a tiered monetization model.
- Source code available on GitHub: <https://github.com/LessVegetables/language-bot>

LEADERSHIP EXPERIENCE

Class Representative

September, 2022 – June, 2023

- Elected by peers to serve as the primary liaison between students and faculty, representing my group of 26 students. Facilitated communication of academic concerns, coordinated feedback sessions, and helped resolve issues related to coursework and scheduling.

- Organized group discussions, assisted in planning academic events, and timely dissemination of important university updates. Strengthened collaboration between students and administration, improving overall student engagement and satisfaction.

SKILLS/CERTIFICATES

Language: Fluent in English, Russian;

Technical Skills:

- Programming Languages: C, C++, Python, Swift, JS/HTML/CSS
- Frameworks/Libraries: Raylib, aiogram, FastAPI
- API Integration: OpenAI ChatGPT API, REST APIs
- Databases: PostgreSQL, SQLite
- Tools: Git, Docker, Visual Studio Code, Nginx
- Concepts: Gitflow, Asynchronous Programming, Object-Oriented Programming, REST API Design
- OS: Linux (Debian), MacOS

Certificates:

- **Mobile Application Development Certificate**
Novosibirsk State University — Continuing Professional Education
250 hours, 2024–2025

INTERESTS

Sports: Cross country skiing/running, rock climbing, biking, hiking.

Love the outdoors. Love interacting with people. Natural leader and a team player. Love working on meaningful projects.