Bc. Radek Cichra

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○ cichrrad
in cichrrad
Czech (Native), English (Fluent), Spanish (Basic)

Objective

M.Sc. student specializing in **High-Performance Computing (HPC)** and **System Programming**. Combining a rigorous mathematical background (FNSPE with Honours) with practical software engineering (FIT). Interested in **C++, Ruby, Parallel programming** and **(graph) algorithms** (TNL, CUDA, Kokkos, OpenMP).

Education

2024–Present — **Ing. (M.Sc.) in Computer Science – in progress**, *Czech Technical University – FIT*, Prague, Czechia
Master's Thesis: Portable High-Performance Implementation of the Maximum Flow Problem using Kokkos (Device-agnostic parallel graph algorithm).

2024 — **B.Sc. with honours in Applied Informatics and Computer Science**, *Czech Technical University – FNSPE*, Prague, Czechia
Bachelor's Thesis: Parallel graph algorithms for GPU.

Experience

2023–2024 — **Developer, Template Numerical Library (TNL)**, *Czech Technical University*, Prague
Developing and implementing graph algorithms using TNL and CUDA as part of Bachelor's thesis

2024 — **Co-Author, UTEI Course Scripts**
Co-authored 38-page guide on Deterministic Automata, Turing Machines, and grammars

2023 — **Teaching Assistant, ZPRO Course**, *Czech Technical University*, Prague
Guided first-semester students in Python programming

2020 — **English Tutor**, *Vachta Milevsko*, Milevsko
Tutored grades 5–11 in English language skills

Skills

Languages — **C/C++, Python, Ruby**, Java, TypeScript, GDScript
Technologies — Linux, Git, OpenMP, CUDA, (C)Make, Kokkos, Godot
Other — College graduate level mathematics & computer science theory; Elder Scrolls Lore

Certifications & Courses

2024 — English C1 Certificate – Common European Framework of Reference (CEFR)

2024–2025   Chaos Software Data Structures in C++ and Machine Learning Course (with certificate)

Highlighted Projects

To see other projects, feel free to visit my Github.

Ruby/C (Greybox) Fuzzer, *GitHub: cichrrad/apt-fuzzer*
○ Designed a coverage-guided fuzzer with a **forking server** architecture with seed power profiles (**AFL**-inspired). Has custom C instrumentor which injects code to write coverage hits to shared memory, retrieved via IPC by the fuzzer.

CUDA Canny Edge Detector, *GitHub: cichrrad/ni-gpu-canny*
○ Developed a fully parallelized edge detection pipeline on GPU. Optimized memory access using **Shared Memory tiling** for Gaussian blur and hysteresis thresholding kernels.

Game of Life CLI app, *GitHub: cichrrad/gol-sh*
○ CLI screensaver program running Conway's Game of Life with options to tweak, such as custom themes, symbols to represent cells, and speed of the program.

Interests

Music, Fantasy Literature, Linux Customization, Unnecessary Automation and **Game Completion** (Achievement Hunting)