LEO KRUGLIKOV

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♦ EDUCATION

Bachelor in Physics September 2020 - July 2023
EPFL - Ecole Polytechnique Fédérale de Lausanne

♦ RELEVANT COURSES

Mathematics	Advanced real analysis (I, II, III, IV), Advanced algebra (I, II), Probability and Statistics
Physics	Mechanics, Thermodynamics, Fluid dynamics, Electrodynamics, Quantum Mechanics (I, II) Computational ph. (I, II, III), Particle ph., Optics, Statistical ph. (I, II), Solid State ph. (I, II), Metrology and experimental physics (I, II, III, IV).
Other courses	Algorithms I (Princeton University MOOC) | Modern C++ concurrency (online course) Various networking and security courses (courses) Machine & deep learning (books & courses) | Quantum ph. and computing (Qiskit & others)

♦ WORK EXPERIENCE

❑ **EPFL XPlore** | Electrical Engineer September 2022 - present
PCB design for sensors, actuators, and other critical components of the Mars Rover. Low-level programming and driver's programming. Inertial Measurement Unit implementation mechanism design, with fusion algorithms. MCU and embedded (Linux) programming.

❑ **EPFL academic support** | Teaching Assistant September 2022 - February 2023
Teaching assistant in 2 different Physics courses.

❑ **IBA (Ion Beam Applications)** | Software Engineer Summer 2022
Independent project, involving developement of the software to remediate old chip's obsolescence problem. Reverse engineering & low level programming using C/C++ & Qt in a semi-embedded environment. The elaborated software aims to replace the existing one on more than 10 proton therapy sites worldwide.

❑ **CERN** | Intern Summer 2021
Studied the CMS computing resources. Developed Python and C++ code to select & skim hadron collision events, to compute the top-quark mass & track primary and secondary vertices. Automated over 50TB of data treatment, while studying theoretical part of particle physics.

♦ SKILLS

Programming languages	C/C++ | Python (advanced), Rust (intermediate)
Tools, libraries and sowtfares	Boost, Qt, CMake, GNU toolchain, Modern OpenGL, NVidia CUDA, ROOT, MatLab, LaTeX, KiCad
Other tech skills	Experienced Arch Linux user. Bash scripting. Network analysis.
Languages	French (native), Russian (native), English (full proficiency), Latvian (native), German (beginner)
Examples of other interests	Numerical/applied physics and mathematics, Machine learning Quantum computing (algorithms, hardware) Low level, graphics programming and GPGPU programming

♦ ACHIEVEMENTS AND PROJECTS

CUDA programming guide	*Personal project:* Open source guide on main topics on CUDA programming with code examples, theoretical notions and main algorithmic patterns. 2nd most liked post on Reddit's CUDA community.
Nordic Baltic Ph. Olympiad	*3rd* place at the Nordic Baltic Physics Olympiad in 2020.
Latvian Ph. Olympiad	*2nd* place at the National Latvian Physics Olympiad in 2019 and 2020.
National Scientific paper	*1st* place at the National Latvian High School paper competition in 2020.