

KIRA PROKOPENKO

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relocatable

Compiler Engineer

WHO AM I?

Curious compiler and runtime engineer experienced in exploring large code bases and brainstorming ways of integrating new features into them. I am interested in programming languages design, implementation, tooling and everything related for over six years and look forward to continuing working with bleeding edge technologies.

LANGUAGES&TECHNOLOGIES THAT I KNOW

| | |
|--------------|--|
| Native | C, C++, Haskell |
| Fluent | Java, Zig, CMake, Go |
| Professional | Idris, Kotlin, Ruby, Python, TypeScript, C# |
| Basic | Bash, Coq, Arend, SQL, GDScript, Prolog, ECMA Script, Elixir, X86 assembly, \LaTeX |
| Beginner | Pearl, Clojure, Lua |
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| Techs | git, POCO C++, Qt5, ANTLR4, Happy, tsc, OpenJDK, Z3 ... |

EXPERIENCE

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|----------------|---|-----------|
| 2022 — | Compiler and runtime engineer Worked on standard libraries development, and implemented following from scratch: <ol style="list-style-type: none">Interoperability between statically and dynamically typed languages, including effective JIT compilation and working with common GC^{pp}Type Creation API in reflections libraryDocumentation generator from source code^pBytecode files linker^pLanguage generation into unmatching VM bytecode, including Type API C++ / Go / x86_64 asm / TypeScript / Ruby / Private languages / ANTLR4 | Huawei |
| 2020 intern | Junior C++ Developer Worked on system intrusion monitor, which supervised usb devices and services C++ / GNU/Linux | vasexpets |

EDUCATION

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|----------------------------------|--|--|
| 2023 — Master's Degree | Tools for developing and analyzing programs Implemented intrinsic in OpenJDK for RISC-V, built Sea of Nodes for TS tsc / OpenJDK / Z3 | ITMO University |
| 2019 — 2023 Bachelor's Degree | Applied math and CS Among other subjects, I studied type theory, logics in category theory and semantics of programming languages. Implemented following projects: <ol style="list-style-type: none">Lama language compiler to x86_32 assembly, including precise mark-and-copy GC^pLL(1) parser generator (Haskell^p → Haskell^p Idris^p)Copy-on-write fork in xv6^pFew proofs in Coq in big and small step semantics, as well as in Hoare triples^pToy language interpreter in Haskell^p | ITMO University |
| 2015 — 2019 | School, Computer Graphics Support Group Gave talks on numerous scientific conferences. Personal projects include: <ol style="list-style-type: none">Realtime 3D rendering engine with OpenGL/DirectX & WinAPIRay tracing engine on CPURay marching framework using SDF on GPU C / C++ / OpenGL / DirectX / GLSL / HLSL | Physics and Mathematics Lyceum #30, St. Petersburg |

LANGUAGES

English C1
Russian native
Japanese learnt for a few months

NON-PROFIT

I regularly donate to LGBTQ+ charitable organization that helped me in the past

HOBBIES

I love drawing and doing stuff related to visual art in general, wish to continue going to climbing