CV

Przemysław Leśniak

Computer Science student

7 May 1994

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About me

I am a passionate Computer Science student from Poland that enjoys problem solving, programming and figuring out how things work. Currently on student exchange in Saarbrücken, Germany.

Skill

- C++
- C
- Python
- Java
- Haskell
- Linux
- Object Oriented Programming
- git
- English language

(*)[The skill scale is from 0 (Fundamental Awareness) to 6 (Expert).]

education

since 2017 — M.Sc. — Saarland University
Computer Science, one semester student exchange

since 2016 — M.Sc. — University of Wrocław
Computer Science

2013-2016 — B.Sc. — University of Wrocław
Computer Science: 4.5/5.0
Virtual memory subsystem for mimiker operating system

experience

now — Compiler design lab, Student Assistant — Saarbrücken
SafeC research project
- Extending LLVM for research purposes.

2017 — Google Summer of Code — Remote work
Improving LLVM Backend for Chapel Compiler
- Improved vectorization by fixing a serious bug and adding extra metadata in LLVM IR which in some cases improved performance of executed code by 400%.

2016-2017 — Nokia, C++ Software Engineer — Wrocław
TTCN-3 Compiler Project
- Greatly reduced number of memory allocations in compiled code using object pool-like design pattern inspired by slab allocator leading to 20% performance gain on average.
- Reduced number of copy operations by introducing move operation in runtime and adding it to compiler code generation that resulted in 10% performance gain in some cases.

2015 — Nokia, C++ Summer Trainee — Wrocław
Parsing library project
- Participated in library design inspired by Parsec library from Haskell language that was used to implement partial parser for TTCN-3 language.
- Designed and implemented algorithm (based on pushdown automata) to locate changes in code in real time that would need to be re-parsed.
- Integrated the algorithm and the parser into QtCreator to provide IDE functionality like auto-completion and jumping to function definitions.

project highlights

mimiker — University of Wrocław operating system — C, MIPS assembly
Played a big role in virtual memory subsystem, mutex implementation, gdb scripting, ramdisk loading, basic filesystems. Helped other students get into the project.

quant — Lossy Image Compression — C++14
Reduces image size by 80% while preserving good image quality. Optimized typically slow algorithm by using tuned data structures and parallelizing parts of code.

hCompiler — Compiler that compiles tiny subset of C — Haskell
Compiles directly to x86 assembly using syntax directed code generation. Supports working recursion and basic language constructs.

GraphDrawer — Visual and real-time editing graph drawing program — Java
Rich in functionality: performs various algorithms on graph, saves graphs as images, draws pretty graph images.

other information

Hobbies: popping dance, speedcubing

Github: `https://github.com/coodie/`