Aleksey Tyurin

Software Engineer
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Education

Saint Petersburg State University — *Saint Petersburg, Russia*
Master of Software Engineering — *2020 – Present*

Saint Petersburg State University — *Saint Petersburg, Russia*
Bachelor of Software Engineering, GPA: 4.7/5.0 — *2016 – 2020*

Related coursework

- Added syntax support for *Vyper* smart contract programming language in IntelliJ IDEA: syntax highlighting, syntax analysis, code completion, integration with the compiler
  Kotlin | Grammar-Kit

Work experience

JetBrains Research — *Saint Petersburg, Russia*
Researcher at Programming Languages and Tools Lab — *July 2019 – Present*

- In progress of designing a domain-specific language and domain-specific processor for sparse linear algebra acceleration
  Haskell | HDL
- Studied metaprogramming techniques and GPGPU programming to come up with the optimization of GPU programs using partial evaluation. Achieved up to 8x better performance in some scenarios and used microbenchmarking to reveal main bottlenecks and architectural peculiarities that affect the success of such optimizations. The results constitute the Bachelor's thesis and have been reported at *PPoPP'20*
  C++ | Nvidia CUDA | Python
  - `www.research.jetbrains.org/groups/plt_lab/projects/pe-for-gpgpu/`
- The participant of weekly seminars on formal languages
- The participant of Summer School on Probabilistic Programming

Academic achievements

Optimizing GPU programs by partial evaluation
Aleksey Tyurin, Daniil Berezun, and Semyon Grigorev. 2020. In Proceedings of the 25th ACM SIGPLAN Symposium on Principles and Practice of Parallel Programming (PPoPP '20). Association for Computing Machinery, New York, NY, USA, 431–432.

Overview of the Languages for Safe Smart Contract Programming
Tyurin A.V., Tyulyandin I.V., Maltsev V.S., Kirilenko J.A., Berezun D.A. Proceedings of the Institute for System Programming of the RAS (Proceedings of ISP RAS). 2019;31(3):157-176.

Technical skills

Programming languages
Kotlin | C/C++ | Python | Haskell

Mathematics
Linear algebra | probability theory | calculus | mathematical logic

Languages

English (fluent), Russian (native)