Andrei Tonkikh

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Summary

I am a 4th year student studying computer science with focus on cloud computing. I'm fascinated by distributed systems and multiprocessor programming as well as by other kinds of system software such as operating systems and databases. My long term goal is to do research and development in one or several of the above-mentioned areas.

Education

St. Petersburg branch of the Higher School of Economics *2018 – Present*
BS in Computer Science (continuing)
Graduating July 2019

St. Petersburg Academic University *2015 – 2018*
BS in Computer Science

Work Experience

Junior Software Engineer at Yandex *January 2019 – Present*
Enhancing job scheduling algorithms for YT. YT is a distributed batch-processing platform based on Map-Reduce paradigm and running on many thousands of servers. In particular, I'm trying to deal with the problem of resource underutilization caused by fragmentation.

SWE Intern at Yandex *July – December 2018*
Investigated the problem of resource fragmentation on YT clusters. Improved the scheduling simulator – a tool to simulate the traces from the production scheduler and evaluate scheduling strategies. This project included a good amount of concurrent C++ code. The challenge was to make it efficient yet easy to understand and maintain afterwards.

SRE Intern at Google *Summer 2017*
Was part of Traffic Team SRE in London. Improved observability of Google Cloud Engine. Designed, implemented and integrated a library for reporting statistics from test instances of GCE components.

Open Source Contribution

Packer Builder for VMware vSphere *Fall 2017*
Automated creation of virtual machines and OS installation in vSphere environment. The project is in Go language.
github.com/jetbrains-infra/packer-builder-vsphere

Rust Standard Collections Library *Spring 2016*
Contributed to the implementations of B-Tree and Binary Heap in rust standard library.
github.com/rust-lang/rust/pull/33947 and ***github.com/rust-lang/rust/pull/32987***

Most Relevant University Courses

Fall 2018	**External Memory Algorithms**, Big Data Software Engineering
Spring 2018	**Parallel Programming**, Containerization, Computer Networks, Compillers
Fall 2017	**Linux Kernel**, **Databases**, Statistics, Software Engineering
2016 – 17	**Operating Systems**, Functional Programming in Haskell, Java
2015 – 16	Algorithms and Data Structures, C++, Linux Administration

Courseworks include, but are not limited to, writing *multi-threaded OS-kernel* and a simple *containerization utility* in Rust, creating simple linux kernel modules in C, implementing a very basic *mapreduce framework* in Kotlin, a x86 compiler in OCaml, and a *multiplayer 3D action game for Android* in Java.

Programming Languages

Strongest:	C++, C
Comfortable:	Go, Kotlin, Java, Rust, Python, Bash
Limited Experience:	Scala, R, Haskell, OCaml