

# ALYONA ANTONOVA

Software Engineer

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## Experience

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### Serokell

August 2020 – Present

*Haskell Software Engineer*

- Improved the optimizer of smart contract's code in [Morley](#): fixed the former's independency of contract's instruction parse tree by researching the optimizer's associativity; added several-staged optimizing.
- Worked on Morley internal development: increased type safety, improved parser, unified usages of unsafe methods.
- Developed VS Code extension feature: implemented frontend and backend components for handling lambda functions in [Michelson Debugger](#).
- Added feature to ignore external references in markdowns to [Xrefcheck](#) repository documentation verifier.
- Wrote educational articles for the blog about base Haskell typeclasses, e.g. [Foldable](#).

### ITMO University, Computer Technologies Department

Autumn 2020

*Teaching assistant of Functional Programming course*

*Saint Petersburg, Russia*

- Reviewed students' homeworks.

## Projects

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### [Algorithmic Transparency on Search Engines Research](#) | *Python, Selenium, Nginx, R*   January 2021 – June 2021

- Devised monitoring system in keeping with adversarial perception principle, that interfaces with ten search engines; performs web scraping with Selenium WebDriver and Python; collects robots' data by logging Nginx.
- Analysed collected robots' records: confirmed drawn conclusions with exterior knowledge (e.g. the fact that some engines share search results); compared the search engines' page ranking algorithms with known ones.
- Represented collected data with descriptive plots using R.

### [Linear Programming Solver](#) | *Python, NumPy*

April 2021

- Implemented Simplex Method to solve the Linear Programming Problem, utilizing NumPy for linear algebra operations.
- Added CLI to control parameters of the problem.

### [Parser Generator](#) | *Haskell, Alex, Happy*

February 2020

- Developed program, that takes the definition of language tokens and rules of LL(1) grammar and generates matching parser.

## Education

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### ITMO University, Computer Technologies Department

September 2017 – June 2021

*Bachelor*

*Saint Petersburg, Russia*

## Technical Skills

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**Languages:** Haskell (industry); Python (solid); C++, Java, Typescript (basic)

**Technologies:** Linux, Git (solid); Selenium WebDriver, Nginx (basic)

**Other Skills:** Algorithms and Data Structures, Functional Programming, Complexity Theory, Parsing Methods (solid); Cryptography, Reverse Engineering with IDA, Databases Management Systems, Parallel Programming, Machine Learning (basic).

## Extracurricular

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### VK Hackathon

September 2019

*Participant*

- Worked in the team of four, primarily developed website design.