

# Mariia (Mary) Feofanova

Github: [mary3000](#)

Open both to **relocation** and **remote**

Email : [mary.fifa3000@gmail.com](mailto:mary.fifa3000@gmail.com)

Mobile : +7 916 835 49 66

## EDUCATION

- Moscow Institute of Physics and Technology** Moscow, Russia  
*Master's degree in Computer Science* *Sept. 2020 - Aug. 2022 (Present)*
- The Yandex School of Data Analysis** Moscow, Russia  
*Additional education. Big Data Infrastructure speciality* *Sept. 2019 - Aug. 2022 (Present)*
- Moscow Institute of Physics and Technology** Moscow, Russia  
*Bachelor of Applied Mathematics and Computer Science* *Sept. 2016 - Aug. 2020*

## EXPERIENCE

- Mail.ru Group** Moscow, Russia  
*SWE Intern, Tarantool Core team* *Sept. 2020 - Present*  

Tarantool C C++ Lua

  - Started working on the core of [Tarantool](#) - an open-source RAM-based database with persistence used by the biggest tech companies in Russia (Mail.ru, Badoo, Mastercard, Beeline, etc.). Added new features for index support (e.g., bitset index support for binary data).
- JetBrains s.r.o** Remote  
*Research Intern, Programming Languages and Tools Lab* *July 2020 - Aug. 2020*  

C LLVM

  - Modified [GenMC](#) model checker (tool for verifying concurrent programs under weak memory models) to test production code: added intrinsics support, sped up allocation instrumentation by more than 2 times.
  - Tested [mimalloc](#) (Microsoft allocator) using GenMC, designed and implemented 6 tests. [Collaborated](#) with mimalloc maintainer [Daan Leijen](#) to make mimalloc data-race-free, which resulted in confirming and fixing 6 data races (e.g., [wrong memory order](#)). Additionally found 2 tricky [bugs](#) which could not be confirmed by other tools.

- Google LLC** London, UK  
*SWE Intern, Android App Compat team* *July 2019 - Sept. 2019*  

GoLang Java Android Protobuf SQL

  - Wrote design doc on how to break Android API statistics into usage categories, discussed the doc with teammates, which led to simple yet powerful categorization: it considers both number of apps involved and number of total users.
  - Implemented new presubmit warnings about Android compatibility issues using my categories. Now presubmit checker automatically prevents developer from pushing code that breaks popular APIs.

- JetBrains s.r.o** Moscow, Russia  
*SWE, RubyMine team* *Oct. 2018 - Feb. 2019*  
*SWE Intern, RubyMine team* *Jul. 2018 - Aug. 2018*  

Java Ruby Ruby on Rails

  - Improved refactoring subsystem for RubyMine IDE: e.g., developed type specification for [extract parameter](#) option, substring extraction, more structured extract parameter preview, automatic insertion of missing "end" keyword. Totally closed 57 issues, 10 of which present completely new features in RubyMine.

## PROJECTS

- Model checker for testing concurrent programs [Bachelor thesis]** Moscow, Russia  
*C++* *Nov. 2019 - May 2020*
  - Examined pitfalls of two common concurrency testing techniques (fault injection and verification using +Cal) and created my own solution: model checker that avoids these pitfalls. The tool will be integrated into my university course about concurrency.
  - Verified the tool on non-trivial examples. In one of them, my model checker finds complex A-B-A bug 16 times faster than +Cal.
  - Made model checker easy to use and understand: it provides an API to create expressive tests and shows steps to reproduce a bug.

## TEACHING

- Moscow Institute of Physics and Technology** Moscow, Russia  
*Teaching Assistant* *Feb. 2019 - Present*  

C++ x86 Assembly

  - Theory and Practice of Concurrent Computing:** holding seminars and reviewing homework. Learned about internals of modern concurrency concepts from industry, designed new tests for assignments, and contributed to the testing framework by writing model checker as a part of my Bachelor thesis.
  - Parallel and Distributed Computations:** reviewing homework and consulting students. Course is taught by experienced developers from industry, and gives an overview of BigData tools. Thus I keep myself updated with the latest technologies from the BigData field.

## PROGRAMMING SKILLS

- Languages & Technologies:** C++, GoLang, Java, Python, TLA+ / +Cal, SQL, Git, L<sup>A</sup>T<sub>E</sub>X, Docker
- Knowledge:** Algorithms, Data Structures, Concurrent Computing, Distributed Systems.