STEPAN KALININ

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EDUCATION

North Carolina State University   *Aug 2021 - May 2026*
Department of Computer Science, PhD   **GPA:** 4.0/4

Moscow Institute of Physics and Technology   *Sep 2016 - Jun 2020*
Department of Innovation and High Technology, Bachelor's Degree   **GPA:** 4.63/5
Bachelor's thesis topic: "Strategies for computational tasks preemption in distributed clusters"

TECHNICAL SKILLS

Programming languages:	*Highly experienced:*	C++, Python
	Medium level:	C, Golang
	Classroom experience:	F#, Java
Concepts and frameworks:		MapReduce (Hadoop, YT), Protobuf, gRPC
Other skills:		Linux, git, svn, bash, Docker

PROJECTS

MathMaker   *Feb 2019 - Present*
mathmaker.ru is a platform for storing and organizing mathematical olympiad problems. My responsibilities include:
- Contributing to core Django application, adding new features
- Developing LaTeX composition and compilation component which is written in Go and features parallel compilation and a REST API

WORK EXPERIENCE

Google
Software Engineering Intern; C++, Python   *May 2022 - Aug 2022*
Worked as a member of the Jupiter Fabric Scaling team, developing a new algorithm for multi-commodity network flow problem, with the resulting algorithm showing more than 60x decrease in the number of commodities that require routing changes, and the link utilization levels close to optimal.

Aim Tech (now *pinely*)
Software Engineer; C++, Python   *Dec 2020 - Jul 2021*
Developed a tool for quick idea-checking, allowing to implement and run simple trading strategies in a matter of hours and automating daily evaluation of these strategies. The tool was developed in Python and C++, and automated using in-house data-processing system as well as Apache Airflow.

Yandex
Software Engineer (Middle); C++, Python   *Jul 2019 - Jun 2020*
Worked on the **YT** project — MapReduce-based distributed data storage and processing system.
- Implemented a mechanism for the user-transparent delivery of dynamic libraries required by user jobs
- Proposed a scheduling algorithm improvement, reducing preemption rate by 8-20%. That algorithm ended up being my Bachelor's thesis

Software Engineer (Middle); C++   *Oct 2018 - Mar 2019*
- Implemented the "resume watching" feature for **Yandex.Ether**
- Constructed a new pipeline for user actions, reducing delivery delay from hours to tens of seconds

Software Engineer Intern; C++   *Mar 2018 - Sep 2018*
Worked at **Yandex.Video** team, developing and integrating new embedding-based recommendation search index.
- Implemented an easily configurable embedding calculation pipeline for the index, allowing running arbitrary models on documents and building kNN indexes on the resulting embeddings.

TEACHING EXPERIENCE

North Carolina State University

Teaching Assistant *Aug 2021 - Present*
- *CSC 230 - C and Software Tools*. My responsibilities include grading coding projects, and conducting office hours to help students with course-related questions.

Moscow Institute of Physics and Technology

Teaching Assistant *Feb 2019 - Jun 2021*
- *Formal Languages and Translations, Fall 2020.* Conducted practical lessons focused on basic theory and problem solving. Topics covered include automata theory, context-free grammars and finite-state transducers.
- *Theory and Practice in Concurrent Computing, Spring 2020 & Spring 2021.* Conducted lessons on concurrency primitives, concurrent programming techniques and applications such as implementations of fibers and coroutines.
- *Theory and Practice in Concurrent Computing, Spring 2019.* Conducted several lessons on concurrency primitives and lock-free data structures and numerous classes where hometasks were discussed with individual students.

AWARDS

VK Cup *Aug 2018*
- 11th place at VK cup 2018 (among 20 finalist teams): https://codeforces.com/contest/951/standings

ACM ICPC NEERC *Dec 2017*
- 11th place at ACM ICPC NEERC semi-finals 2017 (among 244 semi-finalist teams): https://neerc.ifmo.ru/archive/2017.html

National Olympiad in Informatics *Apr 2016*
- Winner award in National Olympiad in Informatics 2016 (place 15 of 242 in the finals)

National Olympiad in Informatics *Apr 2016*
- Prize-winner award in National Olympiad in Informatics 2015 (place 107 of 251 in the finals)