

Lina KULAKOVA

CONTACT INFORMATION

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VISA INFORMATION

CURRENT RESIDENCE: Zurich, Switzerland
VISA: Swiss Residence Permit B

EDUCATION

2013–2017	ETH ZURICH PhD student in Computational Science and Engineering Laboratory (CSELab) Advisor: Prof. Dr. Petros KOUMOUTSAKOS Expected defence date: 30 August 2017
2015	CSCS-USI SUMMER SCHOOL , LUGANO Subject: Effective High Performance Computing
2008–2013	LOMONOSOV MOSCOW STATE UNIVERSITY Degree: Specialist ¹ of Science in Mathematics Major: Computational Mathematics Advisor: Dr. Kirill Yu. BOGACHEV

¹Specialist is a Russian degree equivalent to MSc

WORK EXPERIENCE

2017– <i>present</i>	Software Engineer at Google, Zurich Working on an internal product offering a robust storage solution.
2011–2013	Programmer at ROCK FLOW DYNAMICS , Moscow I have implemented a 3D kriging interpolation algorithm in C++ and the corresponding graphical user interface using Qt. The algorithm is now used for the geological maps reconstruction.

INTERNSHIPS AND PROJECTS

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| 2013-2017 | II4U FRAMEWORK
I have implemented an approximate Bayesian inference algorithm and a kriging-based surrogate model in C for the open-source uncertainty quantification and optimisation framework II4U |
| 2014 | ACADEMIA INDUSTRY MODELING WEEK
Addressing the IBM project, I have implemented three sparse matrix storage formats in C++ and measured their energy efficiency |
| 2013 | INTERNSHIP AT ETH ZURICH
I have implemented an area-bombing uncertainty quantification method in Python and used it to calibrate the parameters of a jellyfish model

INTERNSHIP AT TU WIEN
I have studied and implemented expression templates in C++ for compile-time algebraic computations |
| 2012 | GOOGLE SUMMER OF CODE
I have implemented three algorithms for polynomial factorisation over finite fields in the « FLINT – Fast Library for Number Theory » open-source project |

PROGRAMMING SKILLS

LANGUAGES: C, C++ (proficient), Python (good), R (prior experience)
PARALLELISATION: MPI, CUDA, OpenMP, POSIX threads

PUBLICATIONS

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| 2017 | Kulakova L., Arampatzis G., Angelikopoulos P., Hadjidoukas P. E., Papadimitriou C., Koumoutsakos P., EXPERIMENTAL DATA OVER QUANTUM MECHANICS SIMULATIONS FOR INFERRING THE REPULSIVE EXPONENT OF THE LENNARD-JONES POTENTIAL IN MOLECULAR DYNAMICS, <i>Accepted for publication in Scientific Reports, 2017</i> |
| 2016 | Kulakova L., Angelikopoulos P., Hadjidoukas P. E., Papadimitriou C., Koumoutsakos P., APPROXIMATE BAYESIAN COMPUTATION FOR GRANULAR AND MOLECULAR DYNAMICS SIMULATIONS, Proceedings of the Platform for Advanced Scientific Computing Conference PASC'16 (2016) |
| 2015 | Hadjidoukas P.E., Angelikopoulos P., Kulakova L., Papadimitriou C., Koumoutsakos P., EXPLOITING TASK-BASED PARALLELISM IN BAYESIAN UNCERTAINTY QUANTIFICATION, Lecture Notes in Computer Science, 9233, 532 (2015) |

CONFERENCES

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|------|---|
| 2017 | <p>PASC'17, Lugano
Presentation «Bayesian Uncertainty Quantification and Propagation for Dissipative Particle Dynamics»</p> <p>CNZ RETREAT, Emmetten
Poster «Data Driven Force Fields for Molecular Dynamics Simulations»</p> <p>SACC SPRING MEETING, Dübendorf
Poster «Data Driven Force Fields for Molecular Dynamics Simulations»</p> |
| 2016 | <p>PASC'16, Lausanne
Presentation «Approximate Bayesian Computation for Granular and Molecular Dynamics Simulations»</p> <p>SIAM UQ'16, Lausanne
Presentation «Data-Driven, Bayesian Uncertainty Quantification for Large-Scale Simulations»
Poster «Π4U: An HPC Framework for Bayesian Uncertainty Quantification of Large Scale Computational Models»</p> |
| 2012 | <p>LOMONOSOV'12, Moscow
Presentation «Statistical Methods for Interpolation Surface Construction»</p> |

REFERENCES

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| Prof. Dr. Petros KOUMOUTSAKOS | PhD advisor
ETH Zürich
Clausiusstrasse 33, 8092 Zürich, Switzerland
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| Prof. Dr. Kirill Yu. BOGACHEV | Diploma advisor
Lomonosov Moscow State University
Leninskiye gory 1, 119991 Moscow, Russia
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bogachev@mech.math.msu.su |
| Dr. Fredrik JOHANSSON | Google Summer of Code advisor
Université de Bordeaux
Cours de la Libération 351, 33405 Talence, France
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SPOKEN LANGUAGES

RUSSIAN (native), ENGLISH (fluent), FRENCH (intermediate), BULGARIAN (intermediate), GERMAN (basic)