

Elena Arseneva (Khramtcova)

Curriculum Vitae

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Research interests

Algorithms and Data Structures, Computational and Discrete Geometry

Professional Appointments

- Sep. 2018 – present **Assistant Professor**, *Mathematics and Computer Science Programmes*, St Petersburg State University (SPbU), Russia.
- Aug. 2016 – Jul. 2018 **Postdoctoral researcher**, *Algorithms Research Group*, Department of Mathematics and Computer Science, Université libre de Bruxelles (ULB), Brussels, Belgium.
- Oct. 2011 – Jul. 2016 **Research and teaching assistant**, *Faculty of Informatics, Università della Svizzera Italiana (USI)*, Lugano, Switzerland.
- Sep. 2010 – Sep. 2011 **Junior Researcher**, *NEUROSCIENCE LAB.*, St Petersburg State University (SPbU), Russia.

Education

- Oct. 2011 – Jul. 2016 **PhD**, *Faculty of Informatics, Università della Svizzera Italiana (USI)*, Lugano, Switzerland.
Thesis title: *On the Hausdorff and Other Cluster Voronoi Diagrams*
Supervisor: Prof. Evanthia Papadopoulou
- Sep. 2005 – Jul. 2010 **Specialist Diploma with Distinction**, *St Petersburg State University (SPbU), Russia*, Major: Mathematician and Software Engineer;
GPA: 4.8/5.0.
Thesis title: *Presaccadic peak detection problem in electrooculography method of eye-tracking*
- Sep. 2001 – Jun. 2005 **Graduate**, *Physics and Mathematics Lyceum 239*, St Petersburg,
GPA: 4.5/5.0.

Teaching, Mentoring, and University service

Students

- Boris Zolotov Bachelor student
Alexandra Istomina Bachelor student

Courses currently taught at SPbU (BSc, in Russian)

- Spring 2018/19 Models of computations I
Spring 2018/19 Modern methods in Theoretical Computer Science VI semester

Spring 2018/19 Modern methods in Theoretical Computer Science VIII semester

Spring 2018/19 Theoretical Computer Science II (seminars)

Invited minicourses

January 2019 Computational geometry, an introduction (high-school students, center "Sirius", Sochi, Russia, in Russian)

Courses at SPbU (BSc, in Russian)

Fall 2018/19 Models of computations

Fall 2018/19 Complexity theory (seminars)

Fall 2018/19 Theoretical Computer Science (seminars)

Courses at ULB

Fall 2017/18 Geometric Algorithms (MSc): guest lectures

Assisted courses at USI

Spring 2014/15 Geometric Algorithms (MSc)

Spring 2013/14 Geometric Algorithms (MSc)

Fall 2013/14 Topics in Algorithms (BSc)

Spring 2012/13 Algorithms and Data Structures (BSc)

Fall 2012/13 Topics in Algorithms (BSc)

Spring 2011/12 Algorithms and Data Structures (BSc)

Other activities at USI

July, August 2015 Mentored a summer internship (UROP) for Andreia Faria Carvalho.
Topic: *Visualizing the 3D Farthest-segment Voronoi diagram and its Gaussian Map*

2014/15 PhD students' representative, Faculty of Informatics

Grants

Jan. 2017 – Jul. 2018 **Early PostDoc Mobility fellowship**, *Swiss National Science Foundation (SNF)*.

Project title: Computational geometry on convex polyhedral surfaces

Conference and invited talks

28.09.2018 *Pole Dancing: 3D Morphs for Tree Drawings*, 26th International Symposium on Graph Drawing and Network Visualization, Barcelona, Spain (Best Paper Award and Best Talk Award. Talk done with Pilar Cano)

23.03.2018 *Reconstructing a convex polygon from its ω -cloud*, 34th European Workshop on Computational Geometry (EuroCG'17), Berlin, Germany

15.09.2017 *Searching edges in the overlap of two plane graphs*, Tohoku University, Sendai, Japan

30.08.2017 *Which convex polyhedra can be made by gluing regular hexagons?*, the 20th Japan Conference on Discrete and Computational Geometry, Graphs, and Games (JCDCG³'2017), Tokyo, Japan

- 14.08.2017 *Cluster Voronoi Diagrams, Stabbing Circles, and Searching Edges in Two Graphs*, Aalto University, Helsinki, Finland
- 2.08.2017 *Searching edges in the overlap of two plane graphs*, WADS'17: Algorithms and Data Structures 15th International Symposium, Newfoundland, Canada
- 8.06.2017 *Dynamic stabbing queries with sub-logarithmic local updates for overlapping intervals*, 12th International Computer Science Symposium in Russia (CSR'17), Kazan, Russia
- 5.04.2017 *Searching edges in the overlap of two plane graphs*, 33th European Workshop on Computational Geometry (EuroCG'17) Malmö, Sweden
- 13.04.2016 *Stabbing circles for sets of segments in the plane*, LATIN 2016: Theoretical Informatics - 12th Latin American Symposium, Ensenada, México
- 30.03.2016 *Stabbing circles for sets of segments in the plane*, 32th European Workshop on Computational Geometry (EuroCG'16), Lugano, Switzerland
- 8.10.2015 *On cluster Voronoi diagrams*, Eindhoven University of Technology (TU/e), Netherlands
- 1.10.2015 —————, Université Libre de Bruxelles, Belgium
- 21.06.2015 *Stabbing circles, Voronoi diagrams and duality*, Algorithmic methods laboratory, Steklov Institute of Mathematics, St. Petersburg, Russia
- 3.07.2015 *Stabbing circles for sets of segments in the plane*, 16th Spanish Meeting on Computational Geometry (EGC'15), Barcelona, Spain
- 18.03.2015 *Linear-Time Algorithms for the Farthest-Segment Voronoi Diagram and Related Tree Structures*, 31th European Workshop on Computational Geometry (EuroCG'15), Ljubljana, Slovenia
- 2.04.2014 *A Randomized Incremental Approach for the Hausdorff Voronoi Diagram of Non-crossing Clusters*, LATIN 2014: Theoretical Informatics - 11th Latin American Symposium, Montevideo, Uruguay
- 5.03.2014 *A simple RIC for the Hausdorff Voronoi Diagram of Non-crossing clusters*, 30th European Workshop on Computational Geometry (EuroCG'14), Ein-Gedi, Israel
- 18.02.2014 *Randomized Incremental Constructions for the Hausdorff Voronoi diagram of point clusters*, ESF EuroGIGA final conference, Berlin, Germany
- 10.07.2013 *On Hausdorff Voronoi diagram of non-crossing clusters*, ESF EuroGIGA meeting, Graz, Austria
- 19.03.2013 *Randomized incremental construction of Hausdorff Voronoi diagram of non-crossing clusters*, 29th European Workshop on Computational Geometry (EuroCG'13), Braunschweig, Germany

Research visits, workshops, and summer schools

- (planned) 10-15.03.2019 *Seventh Workshop on Geometry and Graphs*, Bellairs Research Institute, Holetown, Barbados
- (planned) 2-19.03.2019 Universitat Politècnica de Catalunya, Barcelona, Spain; Visiting: Vera Sacristán, Rodrigo Silveira, Pilar Cano, Carlos Seara

- 22.09.2018 – 2.10.2018 Universitat Politècnica de Catalunya, Barcelona, Spain; Visiting: Vera Sacristán, Rodrigo Silveira, Carlos Seara
- 15.04.2018 – 19.05.2018 *Intensive Research Program in Discrete, Combinatorial and Computational Geometry*, Barcelona, Spain
- 11-16.03.2018 *Sixth Annual Workshop on Geometry and Graphs*, Bellairs Research Institute, Holetown, Barbados
- 1-10.03.2018 Carleton University, Ottawa, Canada; Visiting: Prosenjit Bose
- 16.12.2017 – 18.02.2018 ITMO University, Saint-Petersburg, Russia; Visiting: Kira Vyatkina
- 4-15.09.2017 Tohoku University, Sendai, Japan; Visiting: Matias Korman
- 31.07.2017 – 4.08.2017 Fields Workshop on Discrete and Computational Geometry, Ottawa, Canada
- 22-26.05.2017 Summer school: *Recent Advances in Algorithms*, Saint-Petersburg, Russia
- 28.11-2.12.2016 Workshop: *Uncertainty in Motion*, U. Utrecht, the Netherlands
- 2-10.10.2016 U. Helsinki, Finland; Visiting: Simon Puglisi
- 5-16.09.2016 U. Utrecht, the Netherlands; Visiting: Maarten Löffler
- 17-30.04.2016 Carleton University, Ottawa, Canada; Visiting: Prosenjit Bose
- 10-16.10.2015 CMO-BIRS Workshop: *Searching and Routing in Discrete and Continuous Domains*, Oaxaca, Mexico
- 7-8.10.2015 U. Utrecht and TU. Eindhoven, the Netherlands; Visiting: Irina Kostitsina, Maarten Löffler, Bettina Speckmann
- 30.09.2015 – 6.10.2015 Université Libre de Bruxelles, Belgium; Visiting: Stefan Langerman
- 8-13.03.2015 *Third Annual Workshop on Geometry and Graphs*, Bellairs Research Institute, Holetown, Barbados
- 29-30.06.2015 Universitat Politècnica de Catalunya, Barcelona, Spain; Visiting: Carlos Seara

Hosted research visits

- (planned) June 2019 Visitors: Stefan Langerman, John Iacono (Université Libre de Bruxelles, Belgium)
- 16-18.08.2017 Visitors: Ivor van der Hoog, Maarten Löffler (U. Utrecht, the Netherlands)

Community service

- Program committee CCCG'19, SOCG YRF'18, EuroCG'18, CCCG'17
- Reviewer journals: JOCG, ACM TSAS, CJTA; conferences: CSR'19, STACS'19, SODA'18, SOCG'18, WADS'17, SOCG'17, EuroCG'16, ISAAC'15, EuroCG'15
- Organizing committee EuroCG'16

Patents

D. Belov, E. Khramtcova, A. Ossadtchi. A program for epilepsy diagnostics through EEG (EpiEEG). Patent number 2011616293, Russian Federation. Rightholder: Saint-Petersburg State University

Programming skills

Languages C/C++, Python, Sage, Matlab, Mathematica, Java/JScript, HTML/XML, SQL, Pascal
Libraries CGAL library
Markup Latex

Languages

Russian Mother tongue
English Proficient
Italian Intermediate
German Beginners level
French Beginners level

Personal information

Date of birth 12.03.1988
Nationality Russian
Children Evgeniia, 10 years old
Viktor, 9 years old