Sergey Nurk

Contact Information

Email: sergeynurk@gmail.com
Homepage: http://bioinf.spbau.ru/members/sergey-nurk
Phone: +7-950-043-44-06

Present Position

- Algorithmic Biology Laboratory
  St. Petersburg Academic University
  Junior research fellow
  February 2011–present
- Digital SPomics
  Co-founder
  January 2014–present

Biographical Data

Date of birth: 8th March 1989
Citizenship: Russia
Marital status: Single

Education

Saint-Petersburg Academic University
Ph.D. student since 2011.

- Expected degree: Ph.D. in Computational Biology
- Advisor: Pavel A. Pevzner
- Area of study: computational genomics
- Expected defense date: winter 2015

St. Petersburg State University, Mathematics and Mechanics Faculty, Software Engineering Department
M.Sc. in Computer Science, 2006–2011

- Thesis: "Development of de Bruijn graph processing algorithms for genome assembly problem" (Advisor: Nikolay I. Vyahhi)
- Diploma cum laude

Lyceum of Mathematics and Physics #239, GPA 5.0 (2002–2006)

Additional Education

Academy of Modern Software Engineering
Student
2008–2010

Areas of interest

- bioinformatics
- computational genomics
- algorithms design
- software design

Research Papers

- Sergey Nurk, Pavel A. Pevzner
  "SPArcle: Using Colored de Bruijn Graphs for Analysing Bacterial Genome Variations".
  Manuscript in preparation

- Gabriela I. Guzman, Jose Utrilla, Jonathan M. Monk, Elizabeth Brunk, Ali Ebrahim, Sergey Nurk, Bernhard O. Palsson, Adam M. Feist
  "Model-driven discovery of underground isozyme functions in Escherichia coli".
  Manuscript in preparation

- Andrey D. Prjibelski, Irina Vasilinetc, Anton Bankevich, Alexey Gurevich, Tatiana Krivosheeva, Sergey Nurk, Son Pham, Anton Korobeynikov, Alla Lapidus and Pavel A. Pevzner
  "ExSPAnder: a universal repeat resolver for DNA fragment assembly".
  Bioinformatics, 30(12), i293-i301, 2014

- Sergey Nurk, Anton Bankevich et al.
  "Assembling Single-Cell Genomes and Mini-Metagenomes From Chimeric MDA Products".
  Journal of Computational Biology 20(10), 2013

- Sergey Nurk, Anton Bankevich , Dmitry Antipov, Alexey Gurevich, Anton Korobeynikov, Alla Lapidus, Andrey Prjibelsky, Alexey Pyshkin, Alexander Sirotkin, Yakov Sirotkin, Ramunas Stepanauskas, Jeffrey McLean, Roger Lasken, Scott R. Clingenpeel, Tanja Woyke, Glenn Tesler, Max A. Alekseyev, and Pavel A. Pevzner
  "Assembling Genomes and Mini-metagenomes from Highly Chimeric Reads".
  Proceedings of the 17th Annual International Conference on Research in Computational Molecular Biology, Lecture Notes in Computer Science 7821 (2013).

- McLean JS, Lombardo MJ, Ziegler M, Novotny M, Yee-Greenbaum J, Badger JH, Tesler G, Nurk S, Lesin V, Brami D, Hall AP, Edlund A, Allen LZ, Durkin S, Reed S, Torriani F, Pevzner PA, Friedman R, Venter JC, Lasken RS.
  "Genome of the pathogen Porphyromonas gingivalis recovered from a biofilm in a hospital sink using a high-throughput single cell genomic platform".
  Genome Research 23:867-877 2013

- Anton Bankevich, Sergey Nurk , Dmitry Antipov, Alexey Gurevich, Mikhail Dvorkin, Alexander Kulikov, Valery Lesin, Sergey Nikolenko, Son Pham, Andrey Prjibelski, Alexey Pyshkin, Alexander Sirotkin, Nikolay Vyahhi, Glenn Tesler, Max Alekseyev and Pavel Pevzner
  "SPAdes: a New Genome Assembler and its Applications to Single Cell Sequencing".
  Journal of Computational Biology 19(5), 2012

- S. Nurk
  "An $O(2^{0.4058m})$ Upper Bound for *Circuit SAT*."
  PDMI preprint 10/2009, 2009

Attended Conferences and Student Schools

- Microsoft School on Algorithms for Massive Data (ALMADA).
  Moscow, Russia, 2013
- 17^{th} Conference on Research in Computational Molecular Biology.
  Beijing, China, 2013.
- 16^{th} Conference on Research in Computational Molecular Biology.
  Barcelona, Spain, 2012.
- 10^{th} European Conference on Computational Biology.
  Vienna, Austria, 2011.
- Russian Summer School in Information Retrieval (RuSSIR).
  Voronezh, Russia, 2010

- Microsoft Data Structures and Algorithms School (MIDAS).
  Saint-Petersburg, Russia, 2010
- NoNA Summer School on Complexity Theory.
  Saint-Petersburg, Russia, 2009
- Joint Advanced Student School (JASS).
  Saint-Petersburg, Russia, 2009.
  Topic: Propositional Proof Complexity

Talks and Posters

- Talk "De Bruijn graphs and genome assembly algorithms"
  Bioinformatics summer school
  Moscow, Russia, 2013
- Talk "Assembling Genomes and Mini-metagenomes from Highly Chimeric Reads"
  17^{th} Conference on Research in Computational Molecular Biology.
  Beijing, China, 2013.
- Poster "Expandable de novo genome assembler for short-read sequence data."
  ISMB/ECCB, joint work with Nikolay Vyahhi, Anton Bankevich, Max Alekseyev and Pavel Pevzner.
  Vienna, Austria, 2011
- Talk about a web-harvesting tool developed by my department at Yandex
  Yet Another Conference (YaC'2010)
  Moscow, Russia, 2010
- Talk "Upper bound for Circuit SAT"
  Estonian Theory Days 2009
  Palmse, Estonia, 2009
- Talk "Lower bounds for $k - DNF$ resolution on random $3 - CNF$s"
  Joint Advanced Student School (JASS'2009)
  St. Petersburg, Russia, 2009

Industrial Experience

Yandex company (Yandex is the largest search engine in Russia and develops a number of Internet-based services and products)
Structured Web Mining Department

- Software Engineer (Java)
  2009–2011
- Software Engineering intern
  Summer 2009

Teaching Experience

"Molecular sequence analysis" course at St. Petersburg Academic University
Lecturer
Spring 2014

Java programming language course at St. Petersburg Academic University
Teaching assistant
$2012 - 2013$

Relevant Skills

- Java
- C++
- SQL, XML
- LaTeX, bash, vim

Languages

- Russian: native
- English: fluent

Awards Outstanding student paper award at ISMB 2014