## Sergey Nurk


**Contact Information**

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**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: Fall 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**

1. **Sergey Nurk**, Pavel A. Pevzner
   "SPArcle: Identifying Microbial Genome Variations with Colored de Bruijn Graphs".
   Manuscript in preparation

2. Gabriela I Guzman, Jose Utrilla, **Sergey Nurk**, Elizabeth Brunk, Jonathan M Monk, Ali Ebrahim, Bernhard Palsson, Adam M. Feist
"Model-driven discovery of underground metabolic functions in Escherichia coli".
Accepted to PNAS

3. 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

4. **Sergey Nurk***, Anton Bankevich* (* equal contribution), Dmitry Antipov, Alexey A. Gurevich, Anton Korobeynikov, Alla Lapidus, Andrey D. Prjibelski, Alexey Pyshkin, Alexander Sirotkin, Yakov Sirotkin, Ramunas Stepanauskas, Scott R. Clingenpeel, Tanja Woyke, Jeffrey S. Mclean, Roger Lasken, Glenn Tesler, Max A. Alekseyev, and Pavel A. Pevzner
"Assembling Single-Cell Genomes and Mini-Metagenomes From Chimeric MDA Products".
Journal of Computational Biology 20(10), 2013

5. **Sergey Nurk***, Anton Bankevich* (* equal contribution), Dmitry Antipov, Alexey A. 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).

6. Jeffrey S. McLean, Mary-Jane Lombardo, Michael G. Ziegler, Mark Novotny, Joyclyn Yee-Greenbaum, Jonathan H. Badger, Glenn Tesler, **Sergey Nurk**, Valery Lesin, Daniel Brami, Adam P. Hall, Anna Edlund, Lisa Z. Allen, Scott Durkin, Sharon Reed, Francesca Torriani, Kenneth H. Nealson, Pavel A. Pevzner, Robert Friedman, J. Craig Venter and Roger S. Lasken
"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(5), 867-877

7. Anton Bankevich*, **Sergey Nurk*** (* equal contribution), 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

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

## Attended Conferences and Student Schools

- Systems Biology Workshop.
  Saint-Petersburg, Russia, 2014
- 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

- Poster "New Frontiers of Genome Assembly with SPAdes 3.1"
  ISMB 2014, joint work with Irina Vasilinetc, Andrey Prjibelski, Anton Bankevich, Alexey Gurevich, Yana Safonova, Dmitry Antipov, Anton Korobeynikov, Alla Lapidus and Pavel Pevzner
  Boston, USA, 2014.
- Poster "New Frontiers of Genome Assembly with SPAdes 3.0"
  JGI User Meeting, joint work with Alla Lapidus, Dmitry Antipov, Anton Bankevich, Alexey Gurevich, Anton Korobeynikov, Andrey D. Prjibelski, Yana Safonova, Irina Vasilinetc and Pavel Pevzner
  Walnut Creek, USA, 2014.
- 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

"Comparative genomics" student seminar at St. Petersburg Academic University
Supervisor
Spring 2014

"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++
- Python
- R
- SQL, XML
- LaTeX, bash, vim, git

## Languages

- Russian: native
- English: fluent