

Virginia Panayotova Vassilevska

Curriculum Vitae

Carnegie Mellon University
Computer Science Department
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Education

B.S. California Institute of Technology, 2003, double major in mathematics and engineering and applied science (CS), with honors

M.S. Carnegie Mellon University, 2007, computer science

Ph.D. Carnegie Mellon University, 2008, computer science,
advisor: Guy Blelloch,
thesis title: *Efficient Algorithms for Path Problems in Weighted Graphs*

Awards and Honors

- Carnegie Mellon School of Computer Science Anonymous Graduate Fellowship – since January 2005
- Carnegie Mellon Research Fellowship
- IBM Student Travel Award for SODA 2008
- SIAM Student Travel Award for Workshop on Combinatorial Scientific Computing, 2004.
- NSF Honorable Mention
- **Herbert Ryser Award** in Mathematics – Caltech, May 2002
- Upper Class Merit Award (Carnation Merit Award) – 2002–2003
- Named Arthur R. Adams Summer Undergraduate Research Fellow – Summer 2002
- Semifinalist in the Doris Perpall Speaking Competition – Summer 2001
- Named Marcella Bonsall Summer Undergraduate Research Fellow – Summer 2001
- Upper Class Merit Award (Carnation Merit Award) – 2001–2002
- Member of the Tau Beta Pi Honor society – 2002–present

Work Experience

- Summer Internship at TTI-Chicago (2006)
- Summer Internship at LBNL (2003)
- Tutoring in mathematics (2003)
- Laboratory Assistant in biochemistry lab (2000, 2001)
- Summer Research Fellowships at Caltech: in biochemistry (2000), in mathematics (2001, 2002)

Research Experience

- Aug. 2003 - Aug. 2008* Graduate study in theoretical computer science, specializing in graph algorithms and data structures; advised by Guy Blelloch at the computer science department of Carnegie Mellon University.
- June - Aug. 2006* Summer Internship at the Toyota Technological Institute, Chicago.
- June - Aug. 2003* Summer Internship at the Lawrence Berkeley Lab - worked with Dr. Ali Pinar on improving the cache performance of sparse matrix operations by grouping nonzeros in dense blocks.
- July - Oct. 2002* Summer Undergraduate Research Fellowship at Caltech - worked with Prof. Richard Wilson and with Mark Bilinski on determining the crossing number of $K_{9,9}$.
- June - Sept. 2001* Summer Undergraduate Research Fellowship at Caltech - worked with Prof. Richard Wilson on graceful labeling and on dynamic Huffman coding algorithms.

Teaching

- TA for Graduate Algorithms 2005 - created and graded homeworks and exams; held office hours
- TA for Undergraduate Algorithms 2007 - taught weekly recitation, created and graded homeworks and exams

Related Skills

- Programming Languages: C, C++, Java, OCaml, Lisp, Scheme
- Text Formatting: \LaTeX , HTML, CSS
- Languages: Bulgarian, English, German, Russian

Peer-Refereed Publications

- *Efficient Algorithms for Clique Problems*, V. Vassilevska, under submission.
- *All Pairs Bottleneck Paths and Max-Min Matrix Products in Truly Subcubic Time*, V. Vassilevska, Ryan Williams, Raphael Yuster, under submission.
- *Fixing a tournament*, V. Vassilevska, under submission.
- *A New Combinatorial Approach to Sparse Graph Problems*, Guy Blelloch, V. Vassilevska, Ryan Williams, ICALP 2008.
- *Uniquely Represented Data Structures for Computational Geometry*, Guy Blelloch, Daniel Golovin, V. Vassilevska, SWAT 2008.
- *Nondecreasing Paths in a Weighted Graph or: How to Optimally Read a Train Schedule*, V. Vassilevska, SODA 2008.
- *All Pairs Bottleneck Paths in General Graphs in Truly Subcubic Time*, V. Vassilevska, Ryan Williams, Raphael Yuster, STOC 2007.
- *Finding the Smallest H -Subgraph in Real Weighted Graphs and Related Problems*, V. Vassilevska, Ryan Williams, Raphael Yuster, ICALP 2006.
- *Finding a Maximum Weight Triangle in Sub-Cubic Time, With Applications*, V. Vassilevska and Ryan Williams, STOC 2006.
- *Confronting Hardness Using A Hybrid Approach*, V. Vassilevska, Ryan Williams and Shan Leung Maverick Woo, SODA 2006.
- *Explicit Inapproximability Bounds for the Shortest Superstring Problem*, V. Vassilevska, MFCS 2005.
- *Finding Nonoverlapping Dense Blocks of a Sparse Matrix*, Ali Pinar, V. Vassilevska, the special issue of ETNA on Combinatorial Scientific Computing, 2005.

Unpublished Manuscripts and Technical Reports

- *Uniquely Represented Data Structures for Computational Geometry*, Guy Blelloch, Daniel Golovin, V. Vassilevska, CMU Technical Report CMU-CS-08-115, 2008.
- *Ordered Subsets with Applications*, Guy Blelloch, V. Vassilevska, 2007.
- *A Two Player Game to Combat WebSpam*, Michelle Goodstein, V. Vassilevska, CMU Technical Report CMU-CS-07-134, 2007.
- *Traceable Data Structures*, Umut Acar, Guy Blelloch, Srinath Sridhar, V. Vassilevska, 2006.
- *A New Dynamic Algorithm for Planar Point Location*, Guy Blelloch, Srinath Sridhar, V. Vassilevska, 2005.
- *Confronting Hardness Using A Hybrid Approach*, V. Vassilevska, Ryan Williams and Shan Leung Maverick Woo, CMU Technical Report CMU-CS-05-125, 2005.

Service

- CMU Speakers Club
- Graduate admissions committee, CMU
- Roadshows, Grad School Applications Workshop, Women at SCS, CMU
- Graduate Panel for CMU Grad Women's organization
- Student volunteer, FOCS 2005
- Reviewer for AAAI, FOCS, SODA, ICALP

Extracurricular Activities

- "Espresso Elf" - part of the group that looks after the department's espresso machine, Carnegie Mellon University
- Intramural tennis teams: Champions 2006, 2007.

References

Guy Blelloch

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