

# Pooya Davoodi

Polytechnic Institute of NYU, Department of Computer Science and Engineering  
2 MetroTech Center, Brooklyn, New York 11201, United States  
Mobile: +1 (646) 410-7739  
pooyadavoodi@gmail.com  
www.pooyadavoodi.com

## Research Interests

Space-efficient data structures, dynamic data structures, range queries, computational geometry, I/O efficient algorithms, combinatorial algorithms, graph algorithms, bioinformatics

## Education

- 2008 - 2011 Ph.D. in Computer Science, *MADALGO, Aarhus University, Denmark*  
Advisor: Gerth Stølting Brodal  
Thesis: Data Structures: Range Queries and Space Efficiency
- 2004 - 2007 M.Sc. in Computer Science, *University of Tehran, Iran*  
Advisor: Abbas Nowzari Dalini  
Thesis: Bioinformatics (Genome Pattern Discovery)
- 1999 - 2004 B.Sc. in Computer Science, *University of Tehran, Iran*

## Professional Experience

- 2012 - Present **Polytechnic Institute of NYU**, United States  
Postdoctoral Researcher
- Summer 2010 **Carleton University**, Canada  
Visiting Researcher
- Winter 2010 **University of Leicester**, UK  
Visiting Researcher
- 2007 - 2008 **Abadeihaye Moghime Markaz**, A loan company, Iran  
Software Developer (work at home)  
Implemented the application Sandogh with C#.Net and MS Access

## Scientific Publications

### Refereed Journal Articles

1. Gerth S. Brodal, Pooya Davoodi, and Srinivasa S. Rao, On Space Efficient Two Dimensional Range Minimum Data Structures, To appear in *Algorithmica*, invited to special issue on *ESA 2010*.
2. Fatemeh Zare-Mirakabad, Pooya Davoodi, Hayedeh Ahrabian, Abbas Nowzari-Dalini, Mehdi Sadeghi, Bahram Goliaei, Finding Motifs Based on Suffix Trie, In *Advanced Modeling and Optimization*, volume 11(2), pages 177–194, 2009.

### Refereed Conference Articles

3. Pooya Davoodi, Michiel Smid, and Freek van Walderveen, Two Dimensional Range Diameter Queries, To appear in *Proceedings of the 10th Latin American Theoretical Informatics Symposium (LATIN)*, 2012.
4. Gerth S. Brodal, Pooya Davoodi, and Srinivasa S. Rao, Path Minima Queries in Dynamic Weighted Trees, In *Proceedings of 12th International Symposium on Algorithms and Data Structures (WADS)*, pages 290–301, 2011.
5. Pooya Davoodi and Srinivasa S. Rao, Succinct Dynamic Cardinal Trees with Constant Time Operations for Small Alphabet, In *Proceedings of 8th Annual Conference on Theory and Applications of Models of Computation (TAMC)*, pages 195-205, 2011.
6. Gerth S. Brodal, Pooya Davoodi, and Srinivasa S. Rao, On Space Efficient Two Dimensional Range Minimum Data Structures, In *Proceedings of 18th Annual European Symposium on Algorithms (ESA)*, pages 171–182, 2010.

## Awards and Achievements

- Outstanding Student Instructor Award, UAST (ACECR-Sharif University Branch), Iran, 2007
- Ranked 14th out of 5000, in the national M.Sc. entrance examination for Computer Science in Iran, 2004
- Graduated 2nd in the high school class of 500 students, Iran, 2004

## Leadership and Supervision

- 2007            **UAST (ACECR-Sharif University Branch)**, Iran  
Undergraduate Project Supervisor  
Supervised 19 programming projects
- Spring 2007   **UAST (ACECR-Sharif University Branch)**, Iran  
Organized a workshop on Programming and Graphics Design

## Teaching Experience

- 2004 - 2008    **UAST (ACECR-Sharif University Branch)**, Iran  
Instructor of Computer Science Courses  
Selected Courses: C/C++, C#, HTML, MS Office, Algorithms and Data Structures, Compilers, Fundamentals of Computers
- 2005 - 2007    **University of Tehran**, Iran  
Instructor of Computer Science Courses  
Courses: HTML, JavaScript, Fundamentals of Computers
- 2004            **Ghulamchi Scientific-Educational Foundation**, Iran  
Educational Consultant

## Programming Experience in Computer Courses

Implemented programming projects for Computer Science courses  
Selected courses: Dynamic Algorithms, Computational Geometry, I/O Algorithms, Randomized Algorithms, Data Structures and Algorithms, Data Storage and Retrieval, Computer Simulation, Compilers, Databases, Parallel Algorithms, AI and Robotics

## Technical Skills

- Expert    C/C++, Perl, LATEX  
Basic    Java, Java Script, Visual C# .Net, Assembly, MS Access, MPI (Parallel Computing), Prolog, redis, PHP, SLAM and AweSim, OpenGL, URM