

# Sambuddha Roy

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EDUCATION ◇ **Rutgers University**, New Brunswick, NJ.  
Ph.D. in Computer Science, expected graduation: 2006.  
Research Advisor : Professor Eric Allender.  
◇ **Indian Institute of Technology, Kanpur**, India.  
Bachelor of Technology (BTech), July 1998.  
Undergraduate Research Advisor : Professor Manindra Agrawal.

AWARDS ◇ **Prizes and Scholarships**

- 4<sup>th</sup> position in the IIT-Joint Entrance Exam, 1994, held all across India.
- 1<sup>st</sup> position in the statewide Joint Entrance Exam, 1994, held in the state of West Bengal, India.
- 3<sup>rd</sup> position in Roorkee Entrance Exam, 1994, held all across India.
- Silver Medals in the International Mathematics Olympiad, 1993 (Turkey) and 1994 (HongKong).
- McCormick Fellowship (at University of Chicago, 1998-1999).

RESEARCH INTERESTS Computational Complexity, Derandomization, Algorithms, Combinatorial and Computational Geometry, Algebraic Topology, Combinatorics.

SKILLS ◇ C, Pascal, C++, Java, HTML, Lisp/ML.  
◇ Unix, MS-DOS, MS-Windows.

CITIZENSHIP ◇ Citizen of India.  
◇ Visa status in USA : F1 visa.

- RESEARCH PUBLICATIONS
- ◇ **Grid Graph Reachability Problems.**  
Coauthors : Eric Allender, David Barrington, Tanmoy Chakraborty, Samir Datta.  
Submitted, 2005.
  - ◇ **Oblivious Symmetric Alternation.**  
Coauthor : Venkatesan T. Chakravarthy.  
To appear in Symposium on Theoretical Aspects of Computer Science, 2006.
  - ◇ **Some Combinatorial and Algorithmic applications of the Borsuk-Ulam theorem.**  
Coauthor : William Steiger.  
In Fall Workshop on Computational Geometry, 2005.
  - ◇ **The directed planar reachability problem.**  
Coauthors: Eric Allender, Samir Datta.  
To appear in FSTTCS, 2005, Hyderabad, India.
  - ◇ **Topology inside  $NC^1$ .**  
Coauthors : Eric Allender, Samir Datta.  
In Proc. 20th. Annual IEEE Conference on Computational Complexity, 2005, pp. 298-307.
  - ◇ **Derandomization and Distinguishing complexity.**  
Coauthors : Eric Allender, Michal Koucky, Detlef Ronneburger.  
In Proc. 18th. Annual IEEE Conference on Computational Complexity, 2003, pp. 209-220.
  - ◇ **Time-Space Tradeoffs in the Counting Hierarchy.**  
Coauthors : Eric Allender, Michal Koucky, Detlef Ronneburger, V. Vinay.  
In Proc. 16th. Annual IEEE Conference on Computational Complexity, 2001, pp. 295-302.
- OTHER RESEARCH EXPERIENCE
- ◇ **University of Nebraska at Lincoln**, Lincoln, Nebraska. August, 2004.  
Visited Professor Vinodchandran Variyam and worked with him on problems in *SAT* lower bounds.
- WORK EXPERIENCE
- ◇ **Instructor**, Rutgers University.  
Course : Discrete Mathematics and Probability, CS 206, Summer 2003.
  - ◇ **Teaching Assistant**, Rutgers University.  
Courses:
    - Complexity of Computation. CS 538, Spring 2005.
    - Discrete Mathematics I, CS 205, Fall 2004.
    - Discrete Mathematics and Probability II, CS 206, Summer 2002.
    - Computer Organisation, CS 211, Fall 2001.
    - Foundations of Computer Science, CS 509, Fall 1999.
  - ◇ **Coaching Olympiad students**, India.  
Trained students for the International Mathematics Olympiad, and involved in other problem solving and problem creating activities for the Indian contingent to the Olympiad.

- REFERENCES **Dr. Eric Allender**  
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- Dr. Michael Saks**  
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- Dr. William Steiger**  
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- Dr. Vinodchandran N. Variyam**  
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