

# Joshua Brody

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## Objective

To obtain an internship that enables me to use my algorithms/theory training to solve interesting real-world challenges.

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## Education

- Dartmouth College, Hanover, NH** *September 2005-present*  
Candidate for Ph.D. in Computer Science  
**Advisor:** Amit Chakrabarti  
**Research Area:** Communication Complexity
- New York University, New York, NY** *September 2003-May 2005*  
Master of Science in Computer Science. GPA: 3.97/4.0
- Carnegie Mellon University, Pittsburgh, PA** *September 1993-December 1997*  
Bachelor of Science in Mathematics/Computer Science. GPA: 3.32/4.0
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## Selected Work Experience

- Dartmouth College, Hanover, NH. Research Assistant** *June 2006-present*
- Analyzed the randomized communication complexity of the Gap Hamming Distance problem. Achieved breakthrough linear lower bound for any randomized, constant-round protocol, with major implications to streaming algorithms. Results published in CCC 2009.
  - Investigated distributed functional monitoring problem. Conceived a suite of lower bounds. Produced first algorithm to monitor a non-monotonic function. Results published in ICALP 2009.
  - Researched information-theoretic lower bounds for communication complexity. Discovered first nontrivial protocol for the multiparty pointer jumping problem. Introduced novel lower bound techniques. Results published in STACS 2008 and CCC 2009.
- Encoda Systems, New York, NY. Software Developer** *June 2003 - February 2004*
- Designed and implemented a data abstraction layer between legacy ISAM database and C-level structures.
- United States Peace Corps, Yako, Burkina Faso. Peace Corps Volunteer** *June 2000 - September 2002*
- Instructed Junior/Senior high school mathematics in French to classes averaging 80 students (500+ total). Developed lesson plans and tests. Taught basic computer skills including typing, email, and Microsoft Office.
- Lockheed Martin ATL, Camden, NJ. Software Engineer** *June 1998 - April 2000*
- Managed configuration and architected version control and testing procedures for LCS (Listen, Communicate, Show), a multi-platform, distributed speech technology project.
- 6DOS, Inc., Pittsburgh, PA. Software Developer** *October 1996 - April 1998*
- Designed and Implemented 6DOS information system, a 3-tier Internet/Intranet knowledge management system. Implemented Web and email user interfaces in C++ on Solaris, using CGI with Apache web server.
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## Technical Skills

*Programming Languages:* C/C++, Java, HTML, Javascript  
*Operating Systems:* Linux/Unix, Windows NT/XP