

- Research Interests* Computational Geometry, Algorithms, Computer Graphics, Optimization  
Scientific Computing, Pattern Recognition and Machine Learning.
- Education*
- Ph.D.:* Computer Science  
SUNY Stony Brook, NY (Aug 2004)  
Thesis Title: Clustering and Reconstructing Large Data Sets.
- Master of Science:* Computer Science  
SUNY Stony Brook, NY (Aug 2003)  
Thesis Title: Cache oblivious algorithms.
- Bachelor of Science:* Mathematics and Computing  
Indian Institute of Technology (IIT), Kharagpur, India, 1999  
Thesis Title: Simplifying polygonal approximations of 2D shapes.
- Experience*
- Assistant Professor* Fall 2004-Present  
Department of Computer Science, Florida State University, Tallahassee, FL.
- Teaching Experience* Fall 2003, Spring 2004  
*Course Instructor:* Taught undergraduate course CSE 373/AMS 373/MAT 373/CSE 573 (cross listed in different departments and levels), "Analysis of Algorithms" in the fall of 2003, to a class of 85 students including some graduate students who enrolled as CSE 573. I prepared a new set of [lecture notes](#) for this course, which are available online. I have also taught lectures for the Advanced Algorithms class, CSE 638, for Prof. Michael A. Bender and co-taught CSE 638 in Spring 2004 semester with Prof. Joe Mitchell. In Fall 2004, I am teaching COP 4531/CGS 5427 (Analysis of Algorithms) and am holding an algorithms reading group at FSU.
- Visiting Researcher* Summer 2001, Fall 2002  
I spent more than nine months at the [Max-Planck-Institut für Informatik \(MPI\)](#), Saarbrücken, Germany, where I was invited as a visiting researcher. At MPI I worked mostly on surface reconstruction and cache friendly algorithms. During this time I was also invited to [BRICS](#), Aarhus, Denmark for attending the workshop on Massive Data Sets and to [Dagstuhl](#), Germany for the seminar on Algorithms on Memory Hierarchies.
- Research Assistant* Aug 2000-2004  
With [Prof. Joseph S. B. Mitchell](#) (Thesis Advisor), Department of Applied Maths and Statistics, SUNY Stony Brook. Please see my publications for work during this time.
- Summer Internship* Summer 1999  
Was selected for vocational student research programme (VSRP) at the Tata Institute of Fundamental Research, Mumbai, India. Worked with Prof. Subir Kumar Ghosh on fast polygon triangulation algorithms using shortest path trees.
- Part Time Researcher* Spring 1999  
ArtWork Inc. USA. Worked on fast polygon boolean operations for VLSI Applications.
- Project Assistant* 1996-1999  
Technology Development Mission: Communication, Networking and Intelligent Automation. IIT Kharagpur, India. Some of the projects I was involved in were
1. Development of monitoring systems for railway overhead electrification parameters. (An Indian Railways Project, Principal Investigator: Prof. M.K. Ghosh)
  2. Simulation of flow of cast composites in near zero gravity environment. An inter departmental project in computational fluid dynamics. (with Prof. B. K. Dhindaw)
  3. Image database implementation and interfacing with MRI scanner using visual basic 4.0 under Win-95. (This software was being marketed by Square-M Limited.)
  4. Topologically equivalent triangulations. (with Prof. Tamal Dey)
  5. Solid modelling project. (Worked on the surface reconstruction module with Prof. Tamal Dey)

## Publications

### Refereed

1. *Curve reconstruction from noisy samples*. with S.W. Cheng, S. Funke, M. Golin, S-H. Poon, E.A. Ramos. Appeared in ACM Symposium on Computational Geometry, Pages: 302 - 311, 2003. (Invited and Accepted to Computational Geometry Theory and Applications)
2. *Computing core-sets and approximate smallest enclosing hyperspheres in high dimensions*. with E.A. Yildirim and J.S.B. Mitchell. Appeared in ALENEX, Pages: 45 - 55, 2003. (Invited and Accepted to Journal of Experimental Algorithmics)
3. *A simple provable algorithm for curve reconstruction*. with T.K. Dey. Appeared in Proceedings of ACM-SIAM Symposium on Discrete Algorithms, Pages: 893 - 894, 1999. More than 25 citations. (17 on Citeseer)
4. *Hand recognition using geometric classifiers*. with Y. Bulatov, S. Sethia and S. Jambawalikar. Best Paper Award in the Theory/Graphics session at Stony Brook's Graduate Research Conference, 2003. To Appear in Proceedings of International Conference on Biometric Authentication, 2004.
5. *New complexity bounds for minimum volume enclosing ellipsoid problem*. with E.A. Yildirim. To Appear in Journal of Optimization Theory and Applications, Vol 126, No. 1, July 2005.

### Book Chapter

6. *Cache oblivious algorithms*. In *Algorithms for Memory Hierarchies*, Editors: U. Meyer, P. Sanders, J.F. Sibeyn. LNCS 2625, Pages: 193 - 212, Springer-Verlag, 2003.

### Under Preparation

7. *Cache oblivious delaunay triangulations*. with Edgar A. Ramos(UIUC).
8. *On Finding good occluders* with U. Chebrolu and J.S.B Mitchell.

### Technical Reports/Other Work

9. *Reviver: a practical provable surface reconstructor*. Stony Brook, 2001. (Preliminary version appeared in Computational Geometry Fall Workshop 2000.)
10. *Simplifying Polygonal approximations of 2D Shapes*. B.Sc. Thesis, IIT Kharagpur, 1999. (A preliminary version of this work was accepted in Shape Modelling, Aizu, 1999)
11. *A Simple polygon triangulation algorithm*. with Prof. Subir Kumar Ghosh. Technical Report, Tata Institute of Fundamental Research, Mumbai, India.

Book Reviews: [5 Book reviews](#) published in ACM Computing Reviews.

## Computer Skills

Languages: C++, C, Matlab, Html, Python, Pascal, Fortran, Prolog, Basic, XBase, VB.  
Tools: Latex, Bison, Flex, 3D-Max, Autocad, PovRay, CorelDraw, HomeSite, Office.  
Libraries: CGAL, LEDA, STL, OpenGL, Inventor, Motif, WxWindows, TPIE, Atlas.  
Operating Systems: Unix/Linux, Windows/Cygwin, Novell Netware.

## Invited Lectures/Visits

DIMACS Workshops on:

1. Geometric Optimization, 03: Approximation Algorithms for k-Center Clustering.
2. Computational Geometry, 03: Hand Recognition Using Geometric Classifiers.

GI-Dagstuhl-Forschungsseminar, 02: Cache Oblivious Algorithms.

MPI-Saarbrücken, 02: Cache Oblivious Algorithms.

Fall Workshop in Computational Geometry, 00: Reviver

Invited Computer Science Dept. Visits: Oregon State University (02), Duke University (02).

## Professional Societies

Current: ACM (Since 1997), SIAM.

Past: ACM-SIGACT, ACM-SIGOPS, IARCS.

*Synergistic Activities* Conference Session Chair: ACM-SIAM Symposium on Discrete Algorithms, Baltimore, 2003.  
*Journal Reviews:* Computational Geometry Theory and Applications, IEEE Transactions on Image Processing, IEEE Transactions on Visualization and Computer Graphics, Journal of Algorithms, Journal of Electronic Imaging, ACM Computing Reviews.  
*Conference Reviews:* ACM-SIAM Symposium on Discrete Algorithms, ACM Symposium on Computational Geometry, IEEE Visualization.  
comp.graphics.algorithms FAQ Contributor

*Awards* Stony Brook University Graduate Council Fellowship, 2002  
Graduate Research Conference, Stony Brook: Best Paper Award, 2003 (Track: Theory/Graphics).  
Travel Awards: Workshop on Massive Data Sets (BRICS, Denmark), GI-Dagstuhl-Forschungsseminar on Algorithms for Memory Hierarchies (MPI, Saarbrücken), Workshop on Discrete and Computational Geometry (MSRI, Berkeley), DIMACS Workshops (Rutgers, NJ). FAT Grant at FSU.

*Collaborators* E. Arkin (SUNY), M.A. Bender (SUNY), Y. Bulatov (Oregon State U), S.W. Cheng (HKUST-Hong Kong), T.K. Dey (Ohio State U), A. Efrat (U Arizona), S. Funke (MPI-Saarbrücken), S.K. Ghosh (TIFR-Mumbai), M. Golin (HKUST), S. Jambawalikar (SUNY), J.S.B. Mitchell (SUNY), S-H. Poon (HKUST), E.A. Ramos (UIUC), S. Sethia (Oregon State U), E.A. Yildirim(SUNY).

*Extra-Curricular Activities* *Sports:* Won three ping-pong championships (two at SUNY and one in India).  
*Traveling:* Germany, Denmark, Spain, US, India, France.  
*Language Skills:* Spoken and written English, Hindi; some German.

*Personal Data* Indian Citizen.

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## References

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