

BIOGRAPHICAL SKETCH

A. Name: Debasis Mitra

Address: Department of Computer Science
Jackson State University
P.O. Box 18839, Rm. JAP 237
Jackson, MS 39217

Academic Qualifications

Ph.D. Computer Science, 1994, University of Louisiana at Lafayette (ULL).

Dissertation: Efficiency Issues in Temporal Reasoning.

Ph.D. Physics, 1984, Indian Institute of Technology at Kharagpur (IIT).

Dissertation: The Lorentz Groups in the Oscillator realization.

M.Sc. Physics, 1977, Indian Institute of Technology at Kharagpur.

Professional Experience

Associate Professor (Fall 1999 - to present). **Assistant Professor** (Fall 1999 - Summer 1999). Department of Computer Science, Jackson State University (JSU); *research and teaching computer science at graduate and undergraduate levels.*

Summer Visiting Faculty Fellow (Summer 1997). Engineering Research Center of NSF, Mississippi State University; *research on time-based scheduling for high performance computing.* (Summers, 1995, 1996) Lawrence Berkeley National Laboratory; *research on temporal databases, and multi-dimensional databases.*

Graduate Assistant/ Visiting Instructor (Fall, 1989 - Spring, 1994). Center for Advanced Computer Science and Computer Science Department, ULL; *research on temporal reasoning and teaching undergraduate and graduate courses in computer science.*

Senior Geophysicist (March, 1982 - July, 1989). Oil and Natural Gas Corporation, India; *geophysical data acquisition and processing, and geological modeling work for petroleum exploration.*

Research Fellow (January, 1978 - March, 1982). Department of Physics, IIT; *research on mathematical physics (Lie group representation).*

B. Publication Related to the Proposed Project

(1) "Expert System Architecture for A Simulation Package," D. Mitra, U. Babu, A. K. Earla, and J. A. Hemminger, ICNPAA conference - AI Track, Daytona Beach, FL, 1998.

(2) "Expert System Architecture for Rocket Engine Numerical Simulators: A Vision," D. Mitra, U. Babu, A. K. Earla, and J. A. Hemminger, an abstract for the NASA Lewis HBCU Conference, 1998, Cleveland, Ohio.

(3) "An object model for a rocket engine numerical simulator," P. N. Bhalla, V. Pratap, P. Reddy and D. Mitra, *NASA University Research Centers - Technical Conference* (URC-TC), Huntsville, Alabama, 1998. An html copy available herehere.

(4) "Cluster Forming Interval Sub-algebras," Debasis Mitra, *CONSTRAINT journal*, special issue on *Spatial and Temporal Reasoning*, vol. 3, pp. 179-189, 1998.

Other Significant Publications

(1) "Complexity studies of a temporal constraint propagation algorithm: A statistical analyses," Debasis Mitra and Nabendu Pal, *Journal of Experimental and Theoretical Artificial Intelligence*, 11 (1999), pp. 155-183.

(2) "Experimenting with a Temporal Constraint Propagation Algorithm," Debasis Mitra and Rasiyah Loganantharaj, *Journal of Applied Intelligence*, Vol 6, No 1, January, 1996.

(3) "Theoretical and practical implications of an algorithm for finding all consistent temporal

models," Debasis Mitra, Proceedings of the *Florida Research Symposium (FLAIRS)*, 1995; also in the Proceedings of the *Time-95 Workshop* (independently reviewed).

(4) "Characterization of Temporal Sequences in Geophysical Databases," Arie Shoshani, Preston Holland, Janet Jacobsen and Debasis Mitra, Proceedings of the *Statistical and Scientific Database Management (SSDBM)* conference, Sweden, 1996.

(5) "The Lorentz group in oscillator realization III - the group $SO(3,1)$," D. Basu and D. Mitra, *Journal of Mathematical Physics (AIP)*, Vol 22, p 946, 1981.

Grant Activities

(1) "Temporal/Multi-dimensional Reasoning with Uncertainty," a CAREER award from the National Science Foundation (NSF), \$150k, 1998-2001, to be extended to 2002 with additional budget.

(2) "Expert System Architecture for Rocket Engine Numerical Simulators: An Object-oriented Design," a grant from the NASA Glenn (Lewis) Research Center, 1995-1999. "Intelligent Interface to the Numerical Simulators (IINS) of Aerospace Transportation Engines," continuation-grant from the NASA Glenn (Lewis) research Center, 1999-2002.

(3) "Studying internet-based technologies for distance education," individual component of the multi-university High Performance Sci-Viz Center-grant (funded by the US Navy), shared with Dr. Qutaibah Malluhi, expected to start from September 1999 for one year.

(4) "Developing a Plant Identification Expert System," a seed grant from the LBNL-JSU-AGMUS Science Consortium (funded by the DOE), 1995-1997.

Professional Activities

Curriculum development activities: Taught and improved courses on *Introduction to computing*, *Principles of compiler construction*, *Introduction to Artificial Intelligence*, *Advanced Artificial Intelligence (graduate level)*, *Design and Analysis of algorithms (graduate level)* and *Temporal databases (introduced at graduate level)*. Participated in departmental *Curriculum development committees*, *Research committee*, *Library-liaison committee* and *Graduate committee*. Engaged in Graduate and Undergraduate *student advising*.

Refereed articles for *Journal of Applied Intelligence*, ACM conferences on databases, and many other conferences and journals. Reviewed the book 'Massively Parallel AI,' edited by Hiroaki Kitano and James Hendler, MIT Press, 1994, for the journal *Artificial Intelligence in Medicine*.

Delivered invited talks to: (1) A panel on 'Qualitative Reasoning' at a conference of the *American Association of Aeronautics and Astronautics*, 1994, San Antonio, Texas. (2) Graduate Colloquium, Mathematics Department, 1996, *University of Southern Mississippi*. (3) Graduate Colloquium, Computer Science department, 1996, *Mississippi State University*, Computer Science Department, (4) NSF Young Scientists Program, 1997, School of Science and Technology, *Jackson State University*.

Professional Memberships: AAAI, International Society of Applied Intelligence, IEEE, ACM, Society of Physics Students, Association of Exploration Geophysicists (India).

C. List of Past Collaborators

(1) Arie Shoshani, Comp. Sc. Research and Development, ICSD, Lawrence Berkeley National Laboratory. (2) Anthony Maida, Center for Advanced Computer Studies, USL. (3) Roger King, Engineering Research Center, Mississippi State University.

D. List of Graduate Advisors

Rasiah Loganantharaj, Center for Advanced Computer Studies, ULL.
Debabrata Basu, Department of Physics, IIT, Kharagpur, India.