

MAHESH C. SHASTRY

CONTACT INFORMATION Electrical Engineering Department
The Pennsylvania State University *Phone:* (814) 308-2757
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University Park
PA 16802 USA

CITIZENSHIP India

DATE OF BIRTH January 22, 1986

RESEARCH INTERESTS Non-linear signal processing, nonlinear dynamics and chaos theory, pattern recognition and machine learning.

OBJECTIVES To pursue my PhD in a prestigious research group on challenging topics in my fields of interest.

EDUCATION **The Pennsylvania State University**, University Park, Pennsylvania, USA
M.S., Electrical Engineering (expected graduation date: August 2009)

- Thesis Topic: Development of Algorithms Based on Empirical Mode Decomposition and Hilbert Transform for Through-Wall Detection and Characterization of Human Activity using CW Radar.
- Advisor: Professor Ram M. Narayanan
- Area of Study: Digital signal processing, time-frequency analysis, non-linear signal processing, DSP algorithm development

National Institute of Technology Karnataka, Surathkal, Karnataka, India

B.Tech, Electrical and Electronics Engineering, August 2003 - May 2007

- GRE Score: Quantitative- 800/800 , Verbal- 730/800, Analytical Writing- 6.0/6.0

ACADEMIC EXPERIENCE

Research Assistant **August 2007 - Present**

- Communications and Space Sciences Laboratory
- Advisor: Dr. Ram M. Narayanan
- Project: Through Wall Sensing of Human Activity, sponsored by Air Force Research Laboratory Contract FA9550-06-C-0101 Through Intelligent Automation, Inc.

Summer Research Intern **May 2006 - August 2006**

- Mathematical Modeling Unit, National Institute of Advanced Studies, Indian Institute of Science, Bangalore
- Advisor: Dr. Prabhakar G. Vaidya
- Project: Nonlinear recursions exhibiting *robust chaos* and applications in pseudo-random number generation.

Summer Student

May 2005 - August 2005

- Radio Astronomy Laboratory, Raman Research Institute, Bangalore
- Advisor: Dr. C. R. Subrahmanya
- Project: Time-frequency analysis of signals from the geo-synchronous satellite INSAT 3-A to analyze from the Doppler shift, the velocity of wobble of the satellite along the line of sight.

JOURNAL
PUBLICATIONS

1. *N Nagaraj, MC Shastry, PG Vaidya, Increasing Average Period Lengths by Switching of Robust Chaos Maps in Finite Precision*, (in press) *European Physical Journal Special Topics, Nonlinear Dynamics and Chaos: Selected Problems, Vol. 165, pp 73 - 83 December 2008*

CONFERENCE
AND WORKSHOPS

1. *RM Narayanan, P-H Chen, MC Shastry, Through Wall Imaging of Human Activity Using Noise Radar*, *Noise Radar Workshop, Arlington, VA November 2008*
2. *MC Shastry, N Nagaraj, PG Vaidya, The B-Exponential Map: A Generalization Of The Logistic Map And Its Applications In Generating Pseudo-Random Numbers*, *Arxiv.org Preprint Archive arXiv:cs.CR/0607069 v1 14 Jul 2006 (cited 4 times) July 2006*
3. *MC Shastry, Algorithms for implementing hilbert huang transform for through Wall human activity detection*, *College of Engineering Research Symposium, The Pennsylvania State University, University Park, April 2008*
4. *N Nagaraj, MC Shastry, PG Vaidya, Switching of Non-linear Dynamical Systems and its effect on round-off induced periodicity with applications to pseudo-random number generation*, oral presentation at *Non-linear Dynamics: Advances and Perspectives, University of Aberdeen, Aberdeen, Scotland September 2007*

5. *N Nagaraj, MC Shastry, PG Vaidya, Stochastic switching of deterministic chaotic systems on a finite precision computer: Implications to chaos and randomness*, poster presented at the *International Conference on Stochastic Processes and Applications, Indian Institute of Science, Bangalore, India July 2007*;
6. *MC Shastry, N Nagaraj, PG Vaidya, A Generalization of the Logistic Map and Its applications in Generating Pseudo-Random Numbers*, presented at *International Conference on Mathematical Modelling and Computer Simulations 2006, Jaipur, India December 2006*

AWARDS

- Research Assistantship, EE Department, Penn State, starting from the Fall 2007 semester.
- Dhirubhai Ambani Scholarship for Undergraduate Studies, administered by the Dhirubhai Ambani Foundation, August 2003 - May 2007
- National Talent Search Scholarship, among the 500 from all over the country selected for this prestigious scholarship administered by the Government of India, July 2001 - May 2007

SERVICE

- *Overall Project Co-ordinator* : Association for India's Development, Penn State Chapter
- *Convenor* : IEEE NITK Students' Chapter
- *Joint Convenor* : Engineer 2007, All India Tech-Symposium Conducted by NITK Surathkal
- *General Secretary* : 2005-06, NITK Students' Union

TECHNICAL SKILLS

MATLAB, Simulink, C, VHDL (average), Mathematica (Average), Assembly Level Programming of 8051, L^AT_EX

OTHER ACHIEVEMENTS

- Third Place in an international MATLAB programming contest sponsored by MathWorks, Inc and Cranes Software, Bangalore. March 2007
- Runners Up in National Level Matlab/VHDL/Hardware Design Contest held at NITK Surathkal as part of a national level tech symposium
- Represented the state of Karnataka in the All India Materials Science Quiz, 2002 conducted by the
- Ranked in the top 2.5% among 200,000 students in the country in the IIT-JEE 2003 Examination for admissions to the Indian Institutes of Technology

ERDŐS NUMBER **Three**

Paul Erdős → K. Ramachandra → Prabhakar G. Vaidya → Mahesh C. Shas-
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