

Sudharsana V. IYENGAR

PERSONAL DATA

DATE OF BIRTH: 03 October 1983
ADDRESS: S24-faculty block, NIAS,
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WORK EXPERIENCE

<i>Current</i> JULY 2016	Research Associate at NIAS, Bangalore <i>Research</i> I am currently working in the Complex systems group. Complex systems group involves modeling phenomena using maths and tools from dynamical systems theory.
MAY 2007-AUG 2010	Scientist B at DEBEL, Bangalore <i>Research</i> DEBEL, a lab of the DRDO, caters to provide support and protection to Indian defense forces under tricky circumstances. I worked in the Sensors and instrumentation division that designs sensors that would raise alarm and warn the defense forces when the environment becomes hazardous. This is a multi disciplinary work as one needs to know to chemistry to understand the detection techniques, instrumentation to design the instruments and mathematical knowledge and signal processing to process the data and present the result. My work mainly was in design and development of oxygen sensor. This oxygen sensor is designed to be used in the aircraft which fighter pilot operates. Both optical based deduction techniques and semiconductor based was designed by our group.

EDUCATION

DECEMBER 2016	Doctorate of Philosophy in PHYSICS, University of Hyderabad , Hyderabad Thesis: "q-deformations and its applications in nonlinear maps" Advisor: Prof. Janaki BALAKRISHNAN
JUNE 2007	Master of Philosophy in THEORETICAL PHYSICS, University of Madras , Chennai. Grade: 70/100. Project: "A study of accuracy of algorithms for planetary longitudes in Indian Astronomy" Advisor: Prof. Sriram M. S.
JUNE 2006	Master of Science in PHYSICS, University of Madras , Chennai. Grade: 75/100. Project: "A non-extensive study of rigid rotators and classical ideal gas." Advisor: Prof. Ranabir CHAKRABORTHY
JUNE 2004	Bachelor of Science in PHYSICS, University of Madras , Chennai. Grade: 76/100.
JUNE 2001	Higher Secondary School, CBSE, Delhi. Grade: 84/100.
JUNE 1999	Secondary school, CBSE, Delhi. Grade: 76/100.

PUBLICATIONS

Sudharsana V. Iyengar and J. Balakrishnan. "q-Deformations and the Dynamics of the Larch Bud-moth Population Cycles" in Nature's longest threads: New Frontiers in the Mathematics & Physics of Information in Biology, eds. J. Balakrishnan and B.V. Sreekantan, pgs. 65-80, World Scientific Publishing Company Pte.Ltd., Singapore (2014).

Sudharsana V. Iyengar , Janaki Balakrishnan; and Jürgen Kurths, "Impact of Climate change on Larch Budmoth cyclic outbreaks", *Scientific Reports*, **6**,27845 (2016);

Sudharsana V. Iyengar, J. Balakrishnan and Jürgen Kurths, "Co-existence of periodic bursts and death of cycles in a population dynamics system", *Chaos*, **26**, 093111 (2016)

Sudharsana V. Iyengar and J. Balakrishnan, "Studies of some q-deformed nonlinear maps", (submitted) (2017).

Sudharsana V. Iyengar and J. Balakrishnan, "Numerical exploration of Tinkerbell map", (submitted) (2017)

SCHOLARSHIPS AND CERTIFICATES

DEC. 2007 CSIR - Lectureship. Top 500 of the entries

DEC. 2008 CSIR - Lectureship. Top 500 of the entries

DEC. 2009 CSIR JRF- Obtained all India rank 68 in the CSIR-UGC NET exam conducted by CSIR in the year December 2009.
Awarded junior research fellowship for the same in 2010.

AUG. 2012 CSIR SRF- Awarded the CSIR senior research fellowship from August 2012 for satisfactory research work.

AUG. 2010 JEST- Obtained All India Rank 48 (98th percentile).

LANGUAGES

TAMIL: Mothertongue

ENGLISH: Fluent

HINDI: Fluent

COMPUTER SKILLS

Operating Systems: WINDOWS,LINUX

Basic Knowledge: Python

Intermediate Knowledge: Mathematica, Origin

Advanced Knowledge: C, C++, Matlab, MS office, \LaTeX , Octave, GNU plot, R

SUBJECT SPECILISATION

Theoretical physics, Nonlinear Dynamics, Numerical programming, Modelling and simulation, Statistical Physics, Data analysis

CONFERENCES ATTENDED

1. Participated in a National workshop on “Physics at small scales” on 18th and 19th March 2011 at School of Physics, University of Hyderabad. Presented a poster on “ A study of accuracy of Algorithms for Planetary longitudes in India Astronomy”
2. Attended the workshop on “Workshop on Networks: Structure and Function” held at IISc, Bangalore from 4 November to 5 November.
3. Attended the “ICTP-ICTS Winter School on Quantitative Systems Biology” held at ICTS, inside IISc, Bangalore from Monday 09 Dec, 2013 - Friday 20 Dec, 2013.
4. Attended the workshop on “ Indo-US Workshop on Time Series Analysis” Organized jointly by IISER, Pune, and SAMSI, USA held at Indian Institute of Science Education and Research (IISER), Pune, from May 25 to May 30, 2015

TEACHING ASSISTANT

1. General Relativity and Gravitation PY549 - University of Hyderabad 2011
2. Mathematical Techniques II - CT402 - University of Hyderabad 2011
3. Statistical Mechanics - PY519 - University of Hyderabad 2011
4. Introduction to Dynamical Systems Theory MA 278 - NIAS 2014
5. Introduction to Dynamical Systems Theory MA 278 - IISc 2015
6. Introduction to Dynamical Systems Theory MA 278 - IISc 2016

TUTOR

1. Conducted a session on SOCPROG in the workshop titled Workshop on Studying Elephants in Human-Dominated Areas held at NIAS from October 10 to 15, 2015 conducted by NIAS in collaboration with Wildlife conservation trust.