

AUGUST, 2016

## CURRICULUM VITAE

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Present: Associate Professor, CR Rao Advanced Institute of Mathematics, Statistics and Computer Science (AIMSCS) University of Hyderabad Campus, Gachibowli, HYDERABAD-500 046, Andhra Pradesh, INDIA India

Position

Experience: 19 + years of experience in Research, Teaching undergraduate and Postgraduate students and Consultancy

### Education

1997 **Ph.D., Applied Mathematics,**  
Title: Non-Linear Differential and Difference Equations Existence, Uniqueness, Stability, Observability And Controllability.  
Dept. of Applied Mathematics, Andhra University, India

1991 **M. Sc., Applied Mathematics,**  
Andhra University, India  
Specialization: Applied Mathematics

1988 **B. Sc. (Mathematics (main), Physics, Chemistry),**  
K.B.N.College, Vijayawada, A.P, India

### Research Interests

Continuous and Discrete non linear Dynamical Systems; Stability Analysis of Dynamical Systems; Mathematical control Theory; Stochastic Differential equations; Mathematical Modeling; Mathematical Ecology; Control Theory; Biomathematics; Lattice Sigma Algebras; Cryptography and Cryptanalysis, Randomness Tests

## Areas of Consultancy

Quality Control; Six Sigma; Risk; Time-Series Analysis; Trend Analysis; Forecasting Techniques;

## Research Supervision

Ph.D - 01, M.Phil - 03 and M.C.A. - 09

Ph.D

1. Mr. PVSSR Krishna “Some Studies on Convective Transport in a fluid saturated porous medium”, NIT Warangal Jointly with Dr. D.Srinivasacharya, 2005.

M.Phil

1. Mr. M.S.V.D. Sudarsan “Controllability, Observability and Stability of First Order Matrix Difference System” S V University, Tirupati, 2009.
2. R.L.N.Charyulu “Fuzzy Discrete Dynamical Systems - Controllability and Observability”, S V University, Tirupati, 2011.
3. P N S Lakshmi “Singular Matrix Sylvester Systems”, S V University, Tirupati, 2011.

## Projects

Presently working in **SMT based Cryptanalysis** project sponsored by DRDO,(2014-till date).

Presently Working as Co-leader of **Test Suite module** of the project sponsored by NTRO.

Presently Working as a member of **Stream Cipher module** of the project sponsored by NTRO.

Worked in the CMS ( Center For Mathematical Sciences ) sponsored by DST.

Worked as a Project Assistant in the UGC major research project entitled ”Boundary Value Problems and their Applications to Biomathematics” under the guidance of Prof K N Murthy in the Department of Applied Mathematics, Andhra University from March 1992 to July 1994.

## Recent Research

Mangrove forests are architecturally simple when compared to rainforests, often lacking under storey of leaves and shrubberies and are generally less species rich than other tropical forests. Mangroves have been heavily used traditionally for food,

timber, fuel and medicine, and presently occupy about 181000  $km^2$  of tropical and subtropical coastline. Mangroves are a precious ecological and economic resource, being vital nursery grounds and breeding sites for birds, fish, crustaceans, shellfish, reptiles, Polychaete, Crabs, Prawn, Zooplankton and mammals; a renewable source of wood; accrual sites for sediment, contaminants, carbon and nutrients; and offer Fortification against coastal erosion.

The construction of analytic approximations of nonlinear problems representing the dynamics of the ecological systems in mangrove areas as described above by using homotopy methods was motivated by the fact that the convergence region and rate of a series are determined by the base functions and auxiliary parameter, where as the region of convergence of solutions constructed using perturbation method, Lyapunovs artificial small parameter method, the  $\delta$ -expansion method, and Adomians decomposition method depend on physical parameters and the type of nonlinearity. To overcome this disadvantage by applying Homotopy analysis and Homotopy perturbation methods the analytical solutions of Two species systems and three species systems are Constructed by considering both Polynomial base functions and exponential base functions and observed that these are better in accuracy and region of convergence when compared to the usual methods like perturbation and non perturbation methods.

## Present Research

The motivation for studying continuous and discrete Sylvester systems and Lyapunov systems goes back to the stability by the second method of Lyapunov. differential and Difference equations occur in numerous settings and forms, both in mathematics itself and in its applications to statistics, computing, electrical circuit analysis, dynamical systems, economics, biology and other fields. The concepts of dichotomy and well conditioning,  $\psi$ - boundedness are extremely important in the analysis of algorithms and in devising numerical schemes for solutions of many of the real world problems. Many types of these problems are naturally formulated as first order matrix dynamical systems. Both continuous and discrete matrix Sylvester systems appear in control theory as well as in many different engineering and mathematical perspectives such as system theory, optimization, power systems, signal processing, linear algebra, differential equations, boundary value problems, and communications. Studying the boundary value problems associated with linear and non-linear systems, perturbed systems and periodic systems.

Constructing a neural network to solve continuous matrix Lyapunov dynamical sys-

tem.

Studying the necessary and sufficient conditions for uniform, strong, weak stabilities, controllability and observability for the continuous and discrete Sylvester dynamical systems.

Studying the dichotomy and conditioning for two-point boundary value problems associated with Sylvester discrete dynamical systems  $LT = \Delta T(n) - (A(n)T(n) + T(n)B(n) + A(n)T(n)B(n) = F(n)$ , satisfying the boundary conditions  $M_0T(n_0) + M_1T(n_1) = W$  with the help of Kronecker product of matrices. Establishing a relationship between the stability bounds of the problem and the growth behavior of the fundamental matrix solution. These results can be used in the analysis of algorithms, in devising numerical schemes for solutions.

Obtained the necessary and sufficient condition for the existence of  $\psi$  - bounded solutions for the inhomogeneous first order matrix difference system  $T(n + 1) = A(n)T(n)B(n) + F(n)$  on  $Z$  and studied the asymptotic behavior of the  $\psi$ - bounded solutions of this system.

## Future Plan of Research

- Consensus problems of networks represented by differential as well as difference equations.
- Construct analytical solutions for non linear continuous matrix Sylvester systems using homotopy analysis, homotopy perturbation techniques.
- Necessary and sufficient conditions for the controllability, observability, realizability and various stabilities of continuous and discrete fuzzy dynamical systems.
- Cryptography using Chaos.
- Cryptography using Finite Automata.
- Cryptanalysis using Randomness tests.

## Computer Skills

- \* Expertise in: FORTRAN, C, C++, SQL, SAS, R, Microsoft Office,  $\text{\LaTeX}$
  - \* Operating systems: Windows
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## Research Papers

### Published in Journals

1. "Existence of a Lattice Non Measurable", Mathematical Sciences International Research Journal, Vol 3, Issue 2,636-638 (2014)(Jointly with D.V.S.R. Anil Kumar and M Raja Pavan Kumar).
2. "Discrete linear Sylvester repetitive process", Nonlinear Studies, Vol. 21, No. 2, 205-218 (2014)
3. "Continuous Lyapunov Dynamical Systems -Artificial Neural Network Approach", International Journal of Differential Equations and Applications, Volume 12 No. 4, 139-149 (2013)(Jointly with G V Deepika)
4. "Characterization of Partial Lattices on Countable Boolean Lattice", GJSFR. Volume 13-F Issue 6, (2013)(Jointly with D.V.S.R. Anil Kumar, Y.V.Seshagiri Rao and Y Narasimhulu).
5. "Characterization of Lie Lattice Sigma Algebras in Formal and Co-formal Systems", Asian Journal of Algebra, 5(3): 66-72 (2012).(Jointly with J Pramada, J. Venkateswara Rao and D.V.S.R. Anil Kumar)
6. "A Note on Fuzzy Discrete Dynamical Systems" published in International Journal of Contemporary Mathematical Sciences (IJCMS), Vol. 7, (2012), no. 39, 1931 - 1939.(Jointly with Charyulu L.N. Rompicherla and G. V. S. R. Deekshitulu).
7. "Lebesgue Decomposition and its Uniqueness of A Signed Lattice Measure" published in Asian Journal of Algebra, 5(2): 34-43 (2012)(Jointly with D.V.S.R. Anil Kumar, J. Venkateswara Rao and T.Nageswara Rao).
8. "Multiple Symmetric Positive Solutions for the System of Higher Order Boundary Value Problems on Time Scales" published in Electronic Journal of Differential Equations (EJDE), Vol. 2011 (2011), No. 102, pp. 1-12 (jointly with Penugurthi Murali, and Kapula R. Prasad).
9. "Fractional Difference Inequalities of Volterra Type" published in International Journal of Pure and Applied Mathematics, , 70(2) (2011), 137-149 (jointly with G.V.S.R. Deekshitulu1 and J. Jagan Mohan ).
10. "A Mathematical Model on Detritus in Mangrove Estuarine Eco System" published in International Journal of Pure and Applied Mathematics, 63(2) (2010), 169-182 (jointly with Ramu Malladi).
11. "First order difference systems - existence and uniqueness", published in

- Proceedings of the American Mathematical Society, 125(12) (1997) 353 - 379 (jointly with K. N. Murty and V. Lakshmi Prasannam).
12. "Periodic multi- point boundary values associated with a non linear Liapunov type matrix difference systems - Existence and uniqueness", published in non linear differential equations theory methods and applications, 1(3&4) (1995) 197-214 (jointly with K. N. Murty).
  13. "Existence uniqueness and sensitivity analysis of solution of two-point value problems associated with non linear Liapunov type difference systems", published in Non Linear Differential Equations Theory Methods and Applications, 1(1&2)(1995) 151-164 (jointly with K. N. Murty and K.R. Prasad).
  14. "Two -point boundary value problems associated with Lypunov type matrix difference system", published in Dynamic Systems and Applications, 4(2) (1995) 205-213 (jointly with K. N. Murty and K.R. Prasad).
  15. "On the use of differential in equalities in three-point boundary values", published in Bulletin of the Institute of Mathematics, Academia Sinica, 21(3) (1993) 263-274 (jointly with K. N. Murty and K.R. Prasad).

### **Papers Communicated**

16. "Existence of  $\psi$  - Bounded Solutions For First Order Matrix Difference System on  $\mathbb{Z}$ " (jointly with Ramu Malladi).

### **Chapters in Books**

17. "Two Species and Three Species Ecological Modeling - Homotopy Analysis" published in the book "Diversity of Ecosystems", ISBN ISBN 978-953-51-0572-5,2012, 221-250.
18. "Controllability and Observability of Continuous Matrix Liapunov Systems" was included in the book entitled "Advances in Nonlinear Dynamics" Series: Stability and Control: Theory, Methods and Applications by S. Sivasundaram, Embry-Riddle Aeronautical University, Florida, USA; A.A. Martynyuk, Institute of Mechanics, Kiev, Ukraine published by Gordon and Breach Science Publishers, 1997, 365-379 (jointly with K. N. Murty).
19. "Vayojana Ganitha Vikasini" for Adult Education, 1991, Andhra Pradesh, India

## Conference Proceedings

20. “Music seen through a lens called Mathematics” Proceedings of the International Seminar on Science of Music 2015, Interuniversity Center for Studies in Science of Music, Mahatma Gandhi University Kottayam, 25-27 September 2015 (jointly with Naga Sundara Jyothi Sripada).(to appear)
21. “Controllability, Stability and Positive Solutions of Autonomous Discrete Matrix Sylvester Systems” Proceedings of the 55th Congress of ISTAM 2010(An International Meet) 259-266 (jointly with Ramu Malladi and Kranthi Kumar Kotha).
22. “Controllability and Observability of The Matrix Lyapunov Systems” Proceedings of the international conference on Recent Advances in Mathematical Science and Applications (RAMSA) held at Vizag. 117-131,(2009).
23. “Existence Uniqueness and Sensitivity Analysis of Solution Of Two-Point Boundary Value Problem Associated With A Non-Linear First Order Difference System” Proceedings of the 54th Congress of ISTAM 2009(An International Meet) 212-218 (jointly with Ramu Malladi).
24. “Stability of the linear and non-linear matrix difference systems” Proceedings of the 52th Congress of ISTAM 2007(An International Meet) 216-222 (jointly with K.N. Murthy and K. Kranthi Kumar,).
25. “Controllability and Observability of Liapunov type matrix difference system”, Proceedings of the 50th Congress of ISTAM 2005 (An International Meet) 125-132 (jointly with K. N. Murty).

## Technical Reports

26. “Algorithms for Synthesis of Sigma LFSR for Cryptographic Applications” (jointly with Neelima Jampala, S.K.Pandey, Atanu Acharya, Y.Nagendar, G.Padmavathi,V.Satish, M.Naresh Babu and N.V.Narendra Kumar).
27. “Design and Testing of Alternating Step Type Pseudo-Random Number Generator Using a Combination of LFSR and FCSR” (jointly with Y. Nagendar, M. Naresh Babu, G. Padmavathi, V. Satish and N.V. Narendra Kumar).
28. “Design of Proprietary Stream Cipher” (jointly with Satish Varagani, and N.V.Narendra Kumar).
29. “ Development of Test Suite for Analysis of Cipher Strength” (jointly with Neelima Jampala).

## **Collaboration in Group**

1. Member of the working group “**SMT solvers based cryptanalysis** ” group .
2. Member of the working group “**Design of Stream Cipher**” group.
3. Member of the working group “**Test Suite**” group.

## **Industrial Consultancy**

1. **Consultant to Capital IQ, A Division of Standard & Poor’s,** Hyderabad, India.

### **Sampling Project**

#### **Synopsis**

Documents containing information are processed and produced by employees of various departments before a service is provided to the customer. Since 100 percent verification is neither viable nor feasible. A sample from the documents produced by the employees is tested and quality is measured. The problem is to identify a sampling strategy, finding the optimal sample size and estimating the quality by estimating the parameters of the population. Product quality can only be achieved through process quality. So processes of various departments are studied before the start of this project. A random sampling strategy for various teams is developed and optimized the process of EQA (External Quality Assurance) for various divisions. Ready to use excel models were delivered to Capital IQ, A Division of Standard & Poor’s, Hyderabad, India.

- \* Identified the key quality metrics for various departments and their corresponding processes.
- \* Identified the correlation between a particular error and the employee.
- \* Devised a data collection plan with minimum budget.
- \* Designed a procedure for the collection of random samples since all the statistical results depend up on the randomness of the sample.
- \* Recommended the ideal sample sizes for different processes.
- \* Recommended optimum sample sizes for individual employees and teams by quantifying the quality of an employee through various sampling procedure.



- \* Classified various errors.
- \* Identified Tolerance level of errors of individuals as well as teams.
- \* Recommended limits for extrapolated error rates of individuals and teams.
- \* Designed sampling procedures involving Bayesian estimates.
- \* Designed sampling plans with moving averages of the monthly and annual quality measures.
- \* All the results of the models are validated with the past data.

The above models are used by the External Quality Assurance department. They also support the Human Resource department in fixing Variable component for each employee by quantifying individual quality.

## 2. **Consultant to Gem Lubricants, India**

Product Quality Improvement by implementing Six Sigma Techniques (From Nov 2005 to Mar 2006).

### **Synopsis**

Before taking up this initiative, GEM Lubricants was struggling to meet certain specifications imposed by one of its potential customer. The important specification was production of 400 barrels of base oil per month with kinematic viscosity of 14 cst at 100 degree centigrade and acceptance criteria as +/- 0.5 cst.

The DMAIC methodology of six sigma was followed to meet the order. The process improvement project was initiated on 28<sup>th</sup> of November 2005. After defining scope of the project and collected 4 months (August 2005 to November 2005) data. Metrics are defined, after measuring the current production level and the targeted production level. The measurement of viscosity before bleaching resulted in the increase of productivity and there by shooting the profits up. Recommendations resulted in

- \* increasing the productivity from 339 to 414 barrels per month,
- \* amount of bleach used in the production process reduced from 28 percent to 4 percent of the in put,
- \* defect percentage reduced to 1.69 from 7.08,
- \* Yield increased from 92.92 to 98.31,
- \* DPMO (Defects per million oportunities reduced to 16908 from 70796,
- \* process sigma increased to 3.62 from 2.97 and
- \* profit per month increased to INR 630K from INR 187K.

## Training

- \* Trained NTRO Scientists in Randomness Tests of Test Suite module in November 2012 at NTRO New Delhi.
- \* Trained Scientists of Cabinet Secretariat in Randomness Tests in April and June 2014 at New Delhi.
- \* Worked as Coordinator for the the training of Scientists of Cabinet Secretariat at New Delhi held from April to July 2014.

## Teaching Experience

- \* Working with C R Rao AIMSCS from 7<sup>th</sup> March 2013 till date, as Associate Professor.
- \* Worked with C R Rao AIMSCS from 27<sup>th</sup> April 2009 to 6<sup>th</sup> March 2013 as Assistant Professor(IIT Scale),
- \* taught the courses entitled “Advanced Engineering Mathematics” (Course Code. MT/NT 403/803) to students of M.Tech (Postgraduate)/Ph.D (Doctoral) Materials engineering, Nano Technology and Mineral Exploration of university of Hyderabad.
- \* taught a courses entitled “Mathematics For Earth Sciences” (Course Code. AP 312) to students of M. Tech. in Mineral Exploration / Advanced P.G Diploma in Mineral Exploration, UCESS, University of Hyderabad from 2011 to 2015 and teaching the same in the current semester.
- \* taught a courses entitled “Mathematics For Earth Sciences” (Course Code. ES 806) to students of Ph.D in Earth & Space Sciences, UCESS, University of Hyderabad from 2011 to 2015 and teaching the same in the current semester.
- \* taught a courses entitled “Computational Techniques” (Course Code. OA 406) to students of Ph.D in Earth & Space Sciences, UCESS, University of Hyderabad from 2012 to 2015 and teaching the same in the current semester.
- \* taught a courses entitled “Signal Processing” to 5<sup>th</sup> batch of Trainee Scientific Officers (OCES-2014) of Geology and Geophysics disciplines at AMD, Hyderabad in 2015.

- \* taught a courses entitled “Numerical Methods” to students of Integrated M.Sc.,(UCESS) College of Integrated Studies , University of Hyderabad in 2015-16.
- \* taught a courses entitled “A first course in Operations Research” (Course Code. ST 456) to students of M.Sc., Statistics in the school of Mathematics and Statistics, University of Hyderabad in 2015.
- \* presently teaching a courses entitled “Introductory Probability nd Statistics” (Course Code. MM 203) to students of Integrated M.Sc., College of Integrated Studies, University of Hyderabad in the current semester.
- \* taught a courses entitled “Discrete Mathematics of Computing/ Mathematics and Probability” (Course Code. CS 6050) to students of B.Tech, M.Tech and Ph.D in the department of Computer Science and Engineering, IIT Hyderabad (during 2013-14).

Worked as

- \* Assistant Professor and Head, Dept. of Computer Applications from 1st January 2009 to 25th April 2009
- \* Worked as Senior Lecturer and Head, Dept. of Computer Applications from 1st January 2009 to 25th April 2009
- \* Worked as Senior Lecturer, Dept. of Mathematics from 1st January 2005 to 13th November 2007
- \* Worked as Lecturer, Dept. of Mathematics from 6th January 19196 to 31st December 2004 of V.R. Siddhartha engineering college, Acharya nagarjuna University, India and taught the following courses to undergraduate and postgraduate students

## **Subjects Taught**

- Differential and Integral calculus, Differential equations, Partial differential equations, Transforms, Matrix theory, Complex analysis and Numerical methods for undergraduate students.
- Fundamentals of Algebra, Lattices, Logic, Combinatorics, Algorithms and Graph Theory for undergraduate students of Engineering and post graduate students of Computer Applications.
- Automatic Theory of Formal Languages for undergraduate students of Computer Science Engineering.

- Fundamentals of Statistics, Quality Control and Reliability for undergraduate students of Engineering.
- Operations Research, Probability, Statistics and FORTAN 77 for post graduate students of Computer Applications.
- \* Taught “Signal Processing” 5th batch of Trainee Scientific Officers (OCES-2014) of Geology and Geophysics disciplines at AMD, Hyderabad, as an extension to BARC Training School, Mumbai in 2014-15.
- \* Done Counseling for the post graduate (M.Sc. applied Mathematics) of B.R.Ambedkar University from 1996 to April 2009.
- \* Done Counseling for post graduate (MCA) of Indira Gandhi national Open University from June 2001 to April 2009.
- \* Trained Scientists of NTRO in ”Test Suite for the analysis of Cipher Strength” in Nov 2012
- \* Trained Scientists of Cabinet Secretariat in “Study of Cryptanalysis using various tests” in June 2014

### **Seminars/conferences/short term courses**

- \* Presented a research paper entitled ”Matrix Liapurov type difference systems” in the international symposium on non linear analysis and applications, Andhra University in Aug 1993.
- \* Presented a research paper entitled ”Non linear three point boundary value problems existence and uniqueness” in the young scientist session of 82nd Indian science congress association in January 1995.
- \* Presented a research paper entitled ”Controllability and observability of non linear Liappurov systems” in international symposium on non-linear analysis and applications to biomathematics in 1997.
- \* Participated in ”Restructuring technical education system for better efficiency and effectiveness in Dec1997.
- \* Participated in a short term course under QIP on ”Aspects of non linear, functional and applicable analysis (ANFAA)” at IIT madras, from 26th may to 1st June 1998.
- \* Presented a research paper entitled ”Controllability and observability of the discrete matrix Liapunov system with the periodic coefficients” in young scientist session of the 86th ISCA in Jan 1999.

- \* Participated in a workshop on "Soft skills in Statistical Techniques using MS EXCELL & SPSS" at Vardhaman Engineering college, from 11th to 12th August 2005.
- \* Presented a paper entitled "Controllability and Observability of Liapunov type matrix difference system", Proceedings of the 50th Congress of ISTAM 2005 (An International Meet)
- \* Participated in a short term course under QIP on "Forecasting Techniques in Business and Industry" at IIT Kharagpur, from 12th to 18th December 2005.
- \* Participated in a faculty development programme on Effective Teaching Methodology, at V.R.S.Engg. College from 8-12-06 to 9-12-06.
- \* Participated in a faculty development programme on Effective Teaching Methodology, at V.R.S.Engg. College from 8-12-06 to 9-12-06
- \* Participated in first state Level Convention of ISTE,A.P, on 10-12-06
- \* Participated in Gyan Lahari Leadership convention at Infosys, Hyderabad, from 3-2-07 to 4-2-07.
- \* Participated in a work shop on Emerging trends in mobile communications and Network Securities V.R.S.Engineering college, Vijayawada, 24-2-07 to 25-2-07.
- \* Participated in a work shop on Communication skills for professional success, V.R.S.Engineering college, Vijayawada, on 21-4-07.
- \* Presented a paper entitled "Stability of the linear and non-linear matrix difference systems" Proceedings of the 52th Congress of ISTAM 2007(An International Meet)
- \* Participated in the Faculty Development Program 'Train The Trainer' at L&T Infotech Bangalore from 05-02-2008 to 06-02-2008.
- \* Participated in the international conference on 'Frontiers of Interface Between Statistics and Sciences' at UOH, Hyderabad from 30-12-2009 to 02-01-2010.
- \* Participated in the Pre-Conference Workshop of the 11th International Conference on Cryptology in India, INDOCRYPT - 2010, held at Hyderabad on 12-12-2010.
- \* Participated in the 11th International Conference on Cryptology in India, INDOCRYPT - 2010, held at Hyderabad from 13-12-2010 to 15-12-2010.

- \* Delivered a talk entitled “Discrete Linear Sylvester Repetitive Process” in RAMSA-2013 conducted in December 2013.
- \* Delivered series of lectures on “Numerical Methods” in a Refresher course at UGC-ASC University of Hyderabad in August 2013.
- \* Delivered a talk entitled “mathematical modeling for engineers and scientists” in a Refresher course at UGC-ASC JNTUH on 14 December 2013.
- \* Delivered an invited talk entitled “Finite Automata Through Qualitative Properties of Linear Systems” in a national conference on Emerging Trends in Mathematical Sciences and Engineering Applications at JNTU Kakinada from 23 to 24 May 2014.
- \* Delivered an invited talk entitled “Quantifying Quality Statistical Way” on 19 July, 2014 in Loyola Academy Degree and P. G. College, Hyderabad.
- \* Delivered a an invited talk entitled “Discrete Linear Sylvester Repetitive Process” in BITS Goa on 5 February 2015.
- \* Delivered a an invited talk entitled “Special Theory of Relativity” in Institute of Advanced Study in Science and Technology, Guwahati, Assam on the occasion of National Science Day Program - 2015 sponsored by DST on 28 February 2015.
- \* Delivered an invited talk entitled “Introduction to Discrete Mathematics” on 14 November, 2015 in Little Flower Degree College, Hyderabad.
- \* Delivered a an invited talk entitled “lattices and Minimization of Boolean functions” in Andhra Loyola College, Vijayawada on 18 October 2016.
- \* Delivered a talk entitled “Randomness Testing”, in a National Instructional Workshop on Cryptology 2015 at Himachal Pradesh University, Shimla in May 2015.
- \* Delivered a talk entitled “Internals of SMT and DPLL Algorithm”, in a International Workshop on SMT Solvers based Cryptanalysis at CR Rao AIMSCS on 27 June 2016.

## Memberships

- \* Member of the Indian society for technical education
- \* Member of the Indian society of Theoretical and Applied Mechanics.
- \* Member of the Computer Society of India.

## Extracurricular

- \* Published Two articles entitled  
“Morality in daily life and understanding of work ethics in NCC” and  
“Flood Relief -Heart Throbbing experience” in NCC Annual journal.
- \* Worked as an associate NCC officer of in the rank of LIEUTNANT from August 1997 to April 2009 commanded 100 cadets and was responsible for various activities.
  - (i) Training in drill, weapon handling, leadership qualities, map reading ad EME etc.
  - (ii) Regular conduct of NCC parades.
  - (iii) Social service activities like blood donation, Tree plantation, Adult education, Janma bhoomi, AIDS awareness, Pulse polio, Traffic assistance, Election duty assistance programs.
  - (iv) Adventurous activities like Cycle Expedition, Trekking, Firing and Para sailing.
  - (v) Liasoned between unit and the college administration.
- \* Worked as NCC caretaker from August 1997 to November 2000.
- \* Worked as Associate NCC Officer in the rank of 2/LT from December 2000 to December 2003 and LT from January 2004 to April 2009.

## Training

- \* Participated in the pre-commission training course conducted by Officer’s Training School (OTS), Kamptee from 1st September 1999 to 30th October 1999 and passed out successfully with high rating.
- \* Participated in the PRCN Non -Infantry technical course at 1 Guj Compotech Regt., Baroda and EME school, Baroda from 9th November 2000 to 13th December 2000 and passed the course with grade A.
- \* Participated in a Refresher course at 1 Guj Compotech Regt. , Baroda and EME school , Baroda from 9th November 2003 to 17th December 2003 and passed the course with distinction and grade A and also stood 1st in the course.
- \* Certified in Training in Traffic Rules and Regulations conducted by the Traffic Division of Vijayawada city police from 5th October 2001 to 6th October 2001.

## Contact Deatails

Present Address: H/o G Sankara Rao,VijayaLakshmi Nivas, First Floor, Adjacent to Government Hospital Main Gate,Opposite Street Andhra Bank Serilingampally, Ananda Nagar, Serlingampalli, Hyderabad-500 019(A.P), INDIA

Permanent Address: S/o P.Bhargava Ramoji, D.No.3-5-18, Ramarajya Nagar, Vijayawada-520 012,(A.P), INDIA

## Photograph

