

Curriculum Vitae

Name : C S Yogananda

Date & Place of Birth : August 28, 1960; Tumkur (Karnataka)

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Educational Background

1. B.Sc. (National College, Bangalore - 4), Bangalore University, 1980.
2. M.Sc. (Mathematics), Bangalore University, 1982.
3. Ph.D (Mathematics), University of Madras (Institute of Mathematical Sciences), Madras, 1990.

Interests

1. Research: Algebraic / Analytic / Transcendental number theory; Elliptic Curves, Modular Forms.

2. Computing Projects: Interest in computer science developed beginning with the usage of T_EX during my Ph.D. days. Students from Engineering colleges worked with me on many projects in this area. Following are some of the significant projects since 2002:

- Linux device driver for CCD camera;
- an inputting mechanism for Kannada on Linux similar to Baraha on windows;

- information processing tools for Kannada;
- Kannada \LaTeX : \LaTeX tool for Kannada available at www.sarovar.org; this is very popular and is being used to typeset documents in Kannada;
- Digitisation of the English-Kannada dictionary of the Mysore University: This was done using the Kannada \LaTeX and the CD is published by Prism Book Pvt. Ltd.
- OCR for Kannada using MATLAB and using Tesseract (in progress (May 2008)).

This has resulted in lot of work under progress in the area of Kannada Computing.

3. Educational: Interested in education at all levels, especially science and mathematics education; setting up mathematics laboratories in school, helping with student projects and giving lectures / conducting problem sessions regularly in schools.

Have participated in the *High School Science Teachers' Programme* organised jointly by *Indian Institute of Science* and *Directorate of Science Education Research and Training*, Bangalore: 1996 (Shimoga Dist.), 1998 (Belgaum Dist.), 1999 (Bellary Dist.), 2000 (Gulbarga), 2000 (Bangalore Urban Dist.), 2001 (Davanagere), 2002 (Bangalore Rural and Raichur), 2003 (Bangalore and Hassan). Participated in the workshop for teachers organised by *Maharashtra Ganita Adhyapak Maha Mandal* in Satara in 1998.

Have been a resource person for work relating to NTS examinations in Karnataka since 1994. Currently, Chairman for the NTSE (State level) question paper committee (SAT – Science)

I have been keenly interested in sky watching and astronomy. Involved in designing some practical projects in astronomy for students; for instance, verifying Kepler's laws by making observations on the moons of Jupiter, simulating the discoveries of the planets beyond Saturn, the structure of the rings around Saturn.

4. General: Interested in rock-climbing and mountaineering; Indian Classical Music; Kannada and English literature. Have conducted *Rasaprasne* in the kannada weekly magazine *Sudha* from April to Sept. '97.

Positions Held

| Position | Place | Duration |
|---------------------------|--|----------------------|
| Research Scholar (U.G.C.) | Ramanujan Institute for Advanced Study, Madras | Jan '83-June '85 |
| Research Fellow | Institute of Mathematical Sciences, Madras | July '85 - Mar '90 |
| Post-Doctoral Fellow | Panjab University Chandigarh | July '90 - April '91 |
| Special Fellow (NBHM) | Panjab University Chandigarh | May '91 - April '92 |
| Special Fellow (NBHM) | Indian Institute of Science, Bangalore | May '92 - Jan '95 |
| Scientist (D.A.E.) | Mathematics Olympiad Cell (NBHM, DAE), IISc | Feb '95 - Dec '03 |
| Reader (E) | Mathematics Olympiad cell (H.B.C.S.E., TIFR), IISc | Jan '04 - March '05 |

Present Position

Professor and Head, Department of Mathematics, S.J.C.E., Mysore.

Honorary Positions

1. Honorary Secretary, *Leelavati Trust* (Regd.), Bangalore.
2. Honorary Joint Director, Jawaharlal Nehru Planetarium, Bangalore from November 01, 2000 to October 31, 2003.
3. Member Secretary, Steering Committee for Informatics Olympiad.
4. Chairman, TeX Users Group India (TUGIndia).

Editorial Responsibilities

1. Founding Editor, *Samasyā*, a triannual High-School journal devoted to problem solving in mathematics: May 1994 to date.
2. Member of the *Editorial Board* of *Resonance*, a monthly journal of science education published by the Indian Academy of Sciences, Bangalore.

- (i) Corresponding Editor: Jan - Dec 1996;
- (ii) Editor: Jan '97 - May '98;
- (iii) Associate Editor: June '98 - Dec 2006.

Conferences

Participated / Lectured in the following Conferences / Summer-Schools:

1. Instructional Conference on Modular Forms, June 1987, I.I.T. Bombay.
2. Instructional Conference on Circle Method, Central University of Pondicherry, Oct. 1987.
3. International Colloquium (Ramanujan Centenary), TIFR, Bombay, Jan. 1988.
4. Durham Symposium on "L-functions in Arithmetic ", Durham, United Kingdom, July 1989.
5. Instructional Conference of Elliptic Curves, TIFR, Bombay, Oct. 1991.
6. Discussion meeting on Fermat's Last Theorem, JNCASR, IISc, Bangalore, 25-29 Dec. 1995.
7. Summer School on Elliptic Curves, International Centre for Theoretical Physics, Trieste, Italy, 11 Aug. - 29 Aug. 1997.
8. Summer School on Cyclotomic Fields, Bhaskaracharya Pratisthana / University of Pune, Pune, 8 Jun - 29 Jun, 1999.
9. Programme for undergraduates at Mehta Institute for Mathematics and Mathematical Physics, Allahabad, 3 July - 22 July, 2000.
10. Advanced Instructional Workshop on Algebraic Number Theory, Harish-Chandra Research Institute, Allahabad, November 2000.
11. National Seminar on Interface of Number Theory, Combinatorics and Special Functions, Ranchi University, Ranchi, August, 2001.
12. Refresher Course in Mathematics – Cryptography, Cochin University, Cochin, May 2–14, 2005.

13. Workshop on Number Theory and Cryptography, Indian Institute of Science, Bangalore, Jan. 23 – Feb 10, 2006.

Visiting Positions

1. International Centre for Theoretical Physics, Trieste, Italy, 17 Aug, 1992 - 29 Sept, 1992.
2. Max-Planck-Institut für Mathematik, Bonn, Germany, 30 May, 1994 - 30 June, 1994.
3. Research and Advanced Study Period, Antalya, Turkey, 01 July, 1994 - 15 July, 1994.
4. Mehta Research Institute, Allahabad, 01 Oct. 1997 - 27 Mar. 1998.
5. Centre Emile Borel, Institut Henri Poincare, Paris, 25 February - 29 March 1999.
6. Mehta Research Institute, Allahabad, 03 Jan. 2000 - 31 Jan. 2000.

Mathematical Olympiads

Have been involved with Mathematical Olympiad movement in India since 1989. I have participated as a resource person, set question papers, and evaluated answer books for various regional (RMO) and national (INMO) olympiads since then.

Have been a resource person / academic coordinator for the *Problem Coordinators workshops* organised by the National Board for Higher Mathematics.

Have been a member of the Core Faculty at the IMO Training Camps and involved in the selection of the Indian Team since 1989. Was a member of the Organising Committee (Computer Committee / Publications Committee / Problem Selection Committee) when India hosted the IMO in July 1996 in Mumbai.

1. Observer with the Leader, 34th IMO, Istanbul, Turkey, July 1993. (India won 4 Silver and 1 Bronze medals.)
2. Deputy Leader of the India Team, 36th IMO, Toronto, Canada, July 1995. (India won 3 Silver and 3 Bronze medals.)

3. Deputy Leader of the India Team, 39th IMO, Taiwan, China-Taipei, July 1998. (India won 3 Gold and 3 Silver medals; India was in 7th position and this has been our best performance yet.)

Publications (Research Papers)

1. Transformation formula for exponential sums involving Fourier coefficients of modular forms, *Proc. Indian Academy Sciences*, Vol. 103, No. 1 (1993), pp 1-25.
2. Solution to the ‘Nine Mathematicians’ problem, *Cruce Mathematicorum*, 1995.
3. (with Dipendra Prasad) Bounding the torsion in CM elliptic curves, Jan. ‘98 Vol. 23 (2001), *CR of CMS*.
4. (with Kirti Joshi) A remark on a paper of Y. Taniyama, *Acta Arithmetica*, XCI.4 (1999), 325-327.
5. (with Dipendra Prasad) A report on Artin’s holomorphy conjecture, *Current Trends in Number Theory*, a special I.N.S.A. Volume, Hindustan Book Agencies, New Delhi, Dec. 1999.

Publications (Reviews)

1. Review of *Tata Lectures on Theta - Vol III*, D. Mumford *et al*, Progress in Mathematics, Birkhauser Verlag, *Journal of I.I.Sc.*, May-June 1993, 73.
2. Review of two books on ‘Ancient Indian Mathematics’, *Current Science*, Vol. 69, No. 8 (Oct. 1995).
3. Review of *Beyond the Quartic Equation*, Bruce King, *Journal of I.I.Sc.*, (1998).
4. Review of *Ideas and Opinions*, Albert Einstein, *Resonance*, Vol. 5, No. 4, (April 2000).
5. Review of *Madame Curie*, Eve Curie, *Resonance*, Vol. 6, No. 3, (March 2001).
6. Review of *Stamping Through Mathematics*, R. J. Wilson, *The Journal of the Indian Academy of Mathematics*, 2001.

7. Review of *How we invented the Airplane*, Orville Wright, *Resonance*, Vol. 8, No. 12, (December 2003).

Publications (General Articles)

1. Promoting Maths Culture, *Deccan Herald*, 26.10.1989.
2. Fermat's Last Theorem - A Theorem at Last, *Resonance*, Vol 1, No. 1 (Jan 1996).
3. McKay's proof of Cauchy's theorem on finite groups, *Resonance*, Vol. 1, No. 4 (April 1996).
4. Nilakantha Somayaji / Leonhard Euler, *Resonance*, Vol. 2, No. 5 (May 1997)
5. Jean Victor Poncelet, *Resonance*, Vol. 2, No. 8 (Aug. 1997)
6. Paul Erdős, the Western Ramanujan, *Resonance*, Vol. 3, No. 3 (March 1998)
7. I M O - 1998, A Brief Report, *Resonance*, Vol. 3, No. 9 (Sept. 1998).
8. International Mathematical Olympiads and India, *Current Science*, Vol. 75, No. 7, (Oct 10, 1998).
9. Poincare and the Theory of Automorphic Functions, *Resonance*, Vol. 5, No. 2 (Feb. 2000).
10. Galileo Galilei: Father of Modern Science, *Resonance*, Vol. 6, No. 8, (August 2001).

Publications (Books)

1. *Problem Primer for the Olympiads* (Jointly with C. R. Pranesachar and B. J. Venkatachala), Interline Publishing, Bangalore.
2. *Mathematical Challenges from Olympiads* (Jointly with C. R. Pranesachar, S. A. Shirali and B. J. Venkatachala), Interline Publishing, Bangalore.
3. Editor: *Ramanujan's Papers*, Prism Books Pvt. Ltd., Bangalore, Feb 2000.
4. *Selected Problems in Number Theory* (Jointly with B. J. Venkatachala), in preparation.

5. *The Joy of Discovery* (jointly edited with Rishi Raj and N. V. Tejaswi), in preparation.
6. *Echoes from Resonance (Number Theory)* (jointly edited with S. A. Shirali), (to brought out by Universities Press (India)).

Co-Curricular Activities:

In addition to my interest in Indian Classical Music and Kannada/English literature, I have been regularly going to the Himalaya since 1989; some highlights are:

1. 'A' Grade in the Basic Mountaineering Course, NIM, Uttar Kashi in April-May 1990;
2. Summited three peaks – Shitidhar, Ladaki and Manali – during the Alpine Style Climbing Camp conducted by the IMF in July 1991;
3. Member of the successful Indo-Austrian Expedition to (virgin peak) Mamostong Kangri II (7023 Mts) 1993.

In addition I have experience in leading trekking groups to various places.
