

# VIJAY BHATKAR, PhD

MEMBER ACM

FELLOW IEEE

FELLOW CSI, INAE, NASI

PADMASHRI

MAHARASHTRA BHUSHAN

## Profile

[www.vijaybhatkar.org](http://www.vijaybhatkar.org)

Thinker and thought leader, researcher and innovator, scientist and philosopher, educator and educationist, author and articulator, policy architect and institution builder, Dr. Vijay Bhatkar is one of the internationally acknowledged scientists and IT leaders of India. Dataquest magazine<sup>1</sup> has acclaimed **Dr. Vijay Bhatkar** amongst 25 pioneers who shaped India's celebrated IT industry (US\$ 60 Billion in 1998) during the last 25 years.

Dr. Vijay Bhatkar is best known as the architect of **PARAM<sup>2</sup> supercomputers** and bringing IT to the masses through a wide range of path-breaking initiatives, such as **GIST<sup>3</sup> multilingual technology**, **MKCL's MS-CIT<sup>4</sup> computer literacy program** and **Education To Home (ETH)<sup>5</sup> initiative**. He is truly an institutional builder and is credited with the creation of several national institutions such as **C-DAC<sup>6</sup>**, **ER&DC<sup>7</sup>**, Techno Park, IITMK, **I<sup>2</sup>IT<sup>8</sup>**, **ETH Research Lab** and **Multiversity**. He led the development of several innovation-based products and systems and in this process nurtured many creative minds, enterprises and start-ups including ETH, MKCL, Divinet<sup>9</sup>, Dishnet, Multiversity, Know-IT and others. For advancing the concept of integrative education through the synthesis of science and spirituality for service of society, Dr. Bhatkar has founded a new generation university called Multiversity.

Dr. Vijay Bhatkar is one of the most acclaimed and decorated scientists of India in terms of national and international awards, fellowships of professional societies and public recognitions including PADMASHRI & Maharashtra Bhushan Awards, the highest recognitions of Government of India and Government of Maharashtra, respectively.

He has authored and edited **11 books** and over **80 research and technical papers** in the field of **supercomputing, artificial intelligence, distributed computer control**, optimal control and education technology as well as in science and philosophy. His contribution to non-local systems based on his doctoral research have been acclaimed and his books on distributed computer control and artificial intelligence have been used as graduate level text books in the US and Indian universities. He has addressed the **Royal Society of London**, conventions of leading professional societies, convocations of over 10 Indian universities and delivered keynote addresses in many national and international conferences and seminars.

- 1 Dataquest is India's leading IT magazine placed Dr. Bhatkar amongst 25 pioneers including Rajiv Gandhi, F. C. Kohli, Narayan Murthy and others who shaped India's IT industry.
- 2 Development of PARAM supercomputer placed India amongst world's 5 nations that possess this technology.
- 3 GIST multilingual technology dissolved the language barrier on computers in India, having 22 official languages, with 10 diverse scripts.
- 4 Largest computer literacy program in the world covering 5 million people in 5 years.
- 5 ETH mission will span 10000 schools in 3 years
- 6 India's largest & most acclaimed R&D laboratory in computing & IT
- 7 Winner of FICCI & ELCINA Awards for Excellence in R&D in Electronics
- 8 Winner of Government of Maharashtra Information Technology Awards in HRD
- 9 Winner of Global e-Biz Innovation Award

For his contributions to IT in India, he was conferred with the **PADMASHRI** award in 2000, one of the highest civilian recognitions by the Government of India and the **Maharashtra Bhushan Award** 1999-2000, the highest recognition by the Government of Maharashtra. He is also a recipient of several prestigious national awards, notably amongst them being, nomination for **Petersberg Prize** 2004, K. G. Foundation's Personality of the Decade Award 2004, Power Grid Corporation of India Ltd., (PGCIL) Award 2001 for Excellence in Information Technology, Om Prakash Bhasin Foundation Award 2000 in Electronics & Information Technology, **Priyadarshni Award** 2000 for contributions in the field of Information Technology, Federation of Indian Chamber of Commerce and Industries (**FICCI**) **Award** for Excellence in Engineering & Technology 1999, **Lokmanya Tilak Award** 1999, Rotary Excellence Award 1997, Pune's Pride Award for Excellence in the World of Education for the year 1996, the **H.K. Firodia Award** for life-time achievements in science and technology 1995-96, Distinguished Alumni Award 1994 of Indian Institute of Technology (**IIT**), **Delhi**, Vivdhilaxi Audyogik Samshodhan Vikas Kendra (VASVIK) Award 1993, **Electronics Man of the Year Award** 1992 by Electronics Component Industries Association (ELCINA), Ramlal Wadhwa Gold Medal Award 1992 by the Institution of Electronics and Telecommunication Engineers (IETE), National Research Development Corporation (NRDC) Award 1984-85, Federation of Indian Chamber of Commerce and Industry (FICCI) Award 1983 to ER&DC for excellence in Research & Development in Electronics, and Gold Medal Award 1976 by the Indian Geo-technical Society. He has also been conferred with several social and spiritual awards.

He has served as a **Member of the Scientific Advisory Committee to the Cabinet of Government of India**. He was also a **Member of several IT Task Forces constituted by the Prime Minister** in 1998 to propel India as IT superpower. He was invited to address The Royal Society in 2003. He led the Indian delegation to South Africa to formulate Indo-SA initiative in advanced computing. He was a member of the Indo-Russian Long Term Programme (ILTP) in Science & Technology. He has also been a member of Indo-Hungarian and Indo-French Joint Commissions. Presently he is the **Chairman of the ETH Research Lab with 'Education To Home' (ETH) Mission** of bringing education to millions of homes transcending the barriers of geographies, languages and economic levels using advances in information technologies. Concurrently, he is the **Chief Mentor and Chairman of Academic and Research Council of the International Institute of Information Technology (I<sup>2</sup>IT), Pune**.

Dr. Bhatkar is the founder **Executive Director of the Centre for Development of Advanced Computing (C-DAC)**, which is India's national initiative in supercomputing where he led the development of PARAM Supercomputers. When India was denied the supercomputer by USA, **Dr. Bhatkar took the challenge of developing an indigenous supercomputer in a record time of 3 years and delivered PARAM 8000 , India's first supercomputer in 1991 and went on to build PARAM 10000 in 1998**, propelling

India into the exclusive club of select five nations, who possessed this strategic technology. Presently, he is advancing the architecture for petascale computing in India. Based on PARAM series of supercomputers, Dr. Bhatkar built the **National Param Supercomputing Facility (NPSF)**, which is one of the largest supercomputing facilities of Asia. At NPSF, he led the development of several high-performance computing applications in collaboration with national as well as international user agencies. Around NPSF, he then led the foundation for building High Performance Computing & Communications (HPCC) Grid for education and research which now is called Garuda Grid by CDAC.

Simultaneously, **in a multilingual country of 1 billion plus people, where only 7 percent speak English, Dr. Bhatkar launched and nurtured a mission for developing multilingual technology encompassing all languages of India.** In this mission, the celebrated GIST multilingual technology was developed which made possible the use and co-existence of all Indian languages along with English on standard computers, dissolving the language barrier on computers once for all in a multi-lingual country like India with 22 official languages having 10 diverse scripts.

Faced with the challenge of creating a large number of software professionals in a shortest possible time, Dr. Bhatkar founded the **Advanced Computing Training School (ACTS)** in C-DAC, which over the years has provided over **10,000 software professionals** to the IT industry and many of them have made both impact and name for themselves in India as well as US and other advanced countries. This was his major contribution to India's IT industry in the 90s. Earlier, **the development of Param series of supercomputers had propelled the image of India as an emerging power in computing and information technology across the world.** Concurrently with C-DAC, he held the position of Advisor in the Department of Electronics (now Ministry of Information Technology), Government of India. He was the National Project Director of the UNDP assisted projects – Appropriate Automation Promotion Programme(AAPP), Knowledge Based Computer System Program(KBCS) and Fiber-Optic System and Applications Program(FOSAPP). Earlier, during 1972-80, he was the core member of the **Information, Planning & Analysis Group (IPAG) of Electronics Commission of Government of India** where he created the appropriate **Automation Promotion Laboratory** for promotion of automation & control in Indian industries.

Prior to CDAC, in 1987, he was Vice President of Tata Consultancy Services (TCS), which is India's largest software enterprise. He was the Director of Electronics Research and Development Centre (ER&DC), Trivandrum from 1980-87, which, under his direction, emerged as India's largest R&D Centre in electronics. At ER&DC, he led the development of several new products and systems leading to large-scale commercialization. ER&DC has since been brought under the umbrella of CDAC. Concurrently, he was also the Executive Director of KELTRON, India's first state

electronics development corporation, which became a source of inspiration to a chain of several other state corporations in different states of India. At KELTRON, he implemented some of the largest projects in electronics and IT in the 80's such as India's first colour television and colour broadcasting, a spectrum of early microprocessor based systems, computerization of Calcutta Metro, security systems for government, simulators for defence, and, most importantly, distributed computer control systems for large power grids, power plants and process industries of India. Through this process he **contributed to the ushering of electronics revolution in India in the 80's.**

He has been one of the architects of **liberalisation of the Internet** in India for which he co-created ETH Ltd. and went on to **pioneer broadband in India**, including **the first deployments of Wi-Fi and WiMAX technologies**. By founding Divinet, an innovation based start-up, he also led the **development of multi-play technology** in India and its use for remote learning and teaching.

For bringing education directly to home he created **ETH Research Lab** where he pioneered the computer literacy program which was taken forward on a large scale by confounding Maharashtra Knowledge Corporation Limited (MKCL). Today **MKCL has created a sort of history by making 5 million people computer literate in a span of 5 years**. At ETH he is now bringing the benefits of ICT in schools for learning, teaching, administration and communication and collaboration. **The mission is to reach 10000 schools in 3 years since its launch in March 2009.**

For transforming education, he advanced the concept of **integral education** and founded the **India International Multiversity (IIMv)** of which he is presently the Founder Chancellor. The IIMv is a multi-campus university founded on Indian knowledge system addressed to aspiring learners across the world. Through IIMv, he is implementing several path-breaking projects relating to transformation of pilgrimage places into knowledge pilgrimage places through ICT, and bringing IT to the masses through e-governance and e-services.

Dr. Bhatkar also envisioned and architected the **International Institute of Information Technology (I<sup>2</sup>IT) for advanced education and research in IT**. I<sup>2</sup>IT is planned as **India's largest high-end education institute with post-graduate education and research facilities for over 2000 students**. I<sup>2</sup>IT was dedicated to the nation by the President of India on 28th May 2003. Dr. Bhatkar has also been a founder member and a member of the Governing Board of Indian Institute of Information Technology and Management (IITM), Trivandrum promoted by Government of Kerala. He has been a member of the International Advisory Committee of Amrita Vishwa Vidyapeetham.

**Dr. Bhatkar is Fellow of IEEE, Member of ACM, Fellow of the Computer Society of India (CSI), Fellow of the Indian National Academy of Engineering, New Delhi;**

Fellow of the National Academy of Sciences India (NASI), Allahabad, Fellow of the Maharashtra Academy of Sciences, Pune; and also several leading national and international professional societies and task forces, holding active positions in many of them. electronics development corporation, which became a source of inspiration to a chain of several other state corporations in different states of India. At KELTRON, he implemented some of the largest projects in electronics and IT in the 80's such as India's first colour television and colour broadcasting, a spectrum of early microprocessor based

He received the **Doctor of Philosophy (Ph.D.)** degree in Engineering from the Indian Institute of Technology, Delhi in 1972. He obtained his Master of Engineering from M.S. University, Baroda in 1968, and Bachelor of Engineering from Nagpur University in 1965.

Dr. Vijay P. Bhatkar was born on 11<sup>th</sup> October 1946 at Muramba, a small village of less than 300 people, in Akola District of the Maharashtra State. His parents Bhausahab and Nirmalatai Bhatkar were actively involved in India's freedom struggle under the inspiration and guidance of Mahatma Gandhi and Pandit Jawaharlal Nehru. His early education was guided by his grandmother who made a deep impression on his school and higher education. His strong commitment to national development is rooted in his upbringing.

After his Ph.D. from IIT Delhi and early career in the Electronics Commission, he married Lalit, who has been a source of strength and support for over 32 years in his 16 working hours per day and no holiday life. They have three children – Samhita, Nachiketas and Taijasa. Often travelling across different parts of India and the world, they live in Pune, the Knowledge City of India.

*Dr. Vijay Bhatkar believes that the 21<sup>st</sup> century belongs to India, the first knowledge-based civilisation of the world, some five thousand years back. When India would celebrate her centenary of freedom in 2047, India would rise and lead the world not only in economic terms or science and technology, but by creating a new paradigm of development for the ascent of humanity as a whole through the synthesis of science and spirituality based in oneness of individual with the universe.*

Although Dr. Vijay Bhatkar led the developments, contributions, institution creations mentioned in this profile, he was ably assisted by respective team leaders and team members. He was also guided and supported by his mentors, notably amongst them are Padma Bhushan Shri K.P.P. Nambiar-Founder of KELTRON, Padma Bhushan Dr. R. A. Mashelkar (FRS)-Former Director General of CSIR and Guruvarya Kisan Maharaj Sakhare (D.Lit.).

He would like to acknowledge the leadership of Vivek Sawant in founding the Advanced Computing Training School (ACTs) of C-DAC and MKCL, of Mohan Tambe in launching the GIST initiative and P. R. Eknath for creating Divinet. He co-founded I<sup>2</sup>IT along with Mr. P. P. Chhabria, its founder Chairman and Chairman of Finolex Group. He would like to attribute the creation of ETH Ltd. to Mr. C. Sivasankaran, the founder of Sterling Group and Siva Ventures and a serial innovative business entrepreneur.

# Science & Technology Awards

YEAR	AWARD
2008	The Science Laureate Award by Pentagram
2007	<b>CDAC-ACS Foundation Lecture Award</b>
2004	<b>Petersberg Prize Nominee</b>
2004	K. G. Foundation – Personality of the Decade Award
2003	<b>Dataquest Lifetime Achievement Award</b>
2003	Annasaheb Chirmule Memorial Award for Contributions to IT
2001	PGCIL Award for Excellence in Information Technology
2000	<b>PADMASHRI Award by Government of India</b>
2000	Om Prakash Bhasin Foundation Award in Electronics & Information Technology
2000	<b>Priyadarshni Award for Contributions in the field of Information Technology</b>
1999	<b>Maharashtra Bhushan Award by Government of India</b>
1999	<b>Global e-Biz Innovation Contest Award</b>
1999	<b>FICCI Award for Excellence in Engineering &amp; Technology</b>
1999	<b>Lokmanya Tilak Award</b>
1997	Rotary Excellence Award
1996	Pune's Pride Award for Excellence in the World of Education
1995	<b>H. K. Firodia Award for Life-time Achievements in Science and Technology</b>
1994	<b>Distinguished Alumni Award of Indian Institute of Technology, Delhi</b>
1993	Vividhlaxi Audyogik Samshodhan Vikas Kendra (VASVIK) Award
1992	Ramlal Wadhwa Gold Medal Award by the IETE
1992	<b>Electronics Man of the Year Award by ELCINA</b>
1983	FICCI Award to ER&DC for excellence in Research & Development in Electronics
1981	NRDC Award
1979	Gold Medal Award by the Indian Geotechnical Society

# Social Awards

Vishwaratna Award

Hayagreev Award

Ramanuja Trust Award

Swatantryaveer Savarkar Rashtriya Smarak's Vidnyan Puraskar

Rajarshi Shahu Maharaj Samata Puraskar

Saraswati Award

Pune Citadel Award

Vidarbha Bhushan Award

Vidarbha Gaurav Award

# Fellowships

**Fellow - IEEE**

**Member - ACM**

**Member - Scientific Advisory Committee (SAC) to Cabinet, Govt. of India (2002-03)**

**Fellow - Computer Society of India (CSI)**

**Member - Governing Council & Executive Committee, CSIR, India (2003-06)**

**Member - Working Groups on R&D and HRD of IT Task Force constituted by PM in 1998**

**Fellow - Indian National Academy of Engineering (INAE)**

**Fellow – National Academy of Sciences India (NASI)**

Fellow - Gokhale Education Society

Fellow - Maharashtra Academy of Sciences

Chair - Academy & Research Council, I<sup>2</sup>IT, Pune

Chairman, Regulating Council - Bhandarkar Oriental Research Institute (2006-08)

National President – Vijnan Bharati (2006)

President – Bal Vidnyan Chalwal