Biography

V.A. Shiva Ayyadurai, Ph.D.

V.A. Shiva Ayyadurai, the inventor of email and other revolutionary innovations, has been passionately interested in science and technology throughout his life. This passion has earned Shiva high honors in the academic and corporate worlds. It has also given him an opportunity to confront the financial and power dynamics that affect scientific innovation, especially when innovation arises from sources considered outside the mainstream - as Shiva, in fact, proudly considers himself to be.

Born in Mumbai in 1963, at the age of five Shiva began observing his grandmother -- a farmer and healer in the small village of Muhavur, in South India - as she applied Siddha, India's oldest system of traditional medicine, to heal and support local villagers. He saw how his grandmother's work was a multi-faceted, comprehensive system that impacted her patients physically, mentally, and even spiritually.

When Shiva's family immigrated to the United States, those early experiences inspired him to pursue the study of modern systems science and information technology. He has never lost touch with India's healing traditions, and much of his work has been directed toward integrating the tools and techniques of East and West.

At the age of 14, after completing a special program in computer science at New York University's Courant Institute of Mathematical Science, Shiva was recruited by the University of Medicine and Dentistry of New Jersey as a Research Fellow. His mentor at UMDNJ soon presented Shiva with a difficult but irresistible challenge. Shiva was asked to create an electronic equivalent of the interoffice mail system, in which hard copies of documents were circulated throughout an office environment.

The interoffice mail system was standard operating procedure in literally millions of companies, hospitals, schools, and other institutions around the world. It was literally everywhere. And in practice, preparing interoffice mail was virtually always tasked to female secretaries or assistants in service of their male bosses and managers.

Shiva understood this assignment in human terms as well in a scientific context. Creating an electronic alternative to interoffice mail would be not only a technical advance, but also a revolutionary work-saving innovation that would benefit everyone from secretaries to CEOs. After writing 50,000 lines of computer code, Shiva introduced the world's first true email system, incorporating Inbox and Outbox, Folders, Address Book, Memo, and other now-familiar features of every email system. He named the system "EMAIL," and was awarded the first United States Copyright for *"Email, Computer Program for Electronic Mail System."* This legally recognized Shiva as the inventor of email, at a time when Copyright was the only protection for software inventions.

Since then Shiva Ayyadurai has become a world-renowned systems scientist, inventor, and entrepreneur. He has been a Fulbright Scholar, Lemelson-MIT Awards Finalist, India's First Outstanding Scientist and Technologist of Indian Origin, Westinghouse Science Talent Honors Award recipient, and a nominee for the U.S. National Medal of Technology and Innovation.

Shiva has earned four degrees from the Massachusetts Institute of Technology (MIT), including a Bachelor's in electrical engineering and computer science, and a dual Master's Degree in mechanical engineering and visual studies from the MIT Media Laboratory. In 2003 he completed his doctoral work in systems biology in the Department of Biological Engineering.

Shiva's love of complex systems, which began in India, has continued to inform all his work. After receiving his PhD he returned to India on a Fulbright grant, where he researched the systems theoretic basis of Eastern medicine. Systems Health®, a new educational program that provides a scientific foundation for integrative medicine, was based on these findings.

Shiva is also the inventor of CytoSolve®, a scalable computational platform for modeling the cell using dynamic integration of molecular pathways models. Like all of Shiva's work, CytoSolve draws on the principle that nature's intelligence is decentralized. While we might expect the nucleus to dominate the cell's function, the work itself is done on the periphery of the cell, in the membrane.

While at MIT, Shiva developed Systems Visualization, a pioneering course integrating systems theory, data, metaphor, and narrative storytelling to enable visualization of complex systems.

After winning a White House competition to automatically analyze and sort President Clinton's email, Shiva started EchoMail, Inc. which grew to nearly $200 million in market valuation.

Shiva has appeared in *The MIT Technology Review, The Wall Street Journal, New York Times, NBC News, USA Today* and other major media. He was named to the "Top 40" in the *Improper Bostonian*. He has also authored four books: *Arts and the Internet, The Internet Publicity Guide, The Email Revolution, and most recently The System and Revolution.*

His passion for entrepreneurialism continues as Managing Director of General Interactive, a venture fund that incubates, mentors, and funds new startups in in rural healthcare, media, biotechnology, and information technology. Shiva also founded Innovation Corps, to inspire and enable innovation among teenagers worldwide. He serves as a consultant to CEOs and Executive Management at Fortune 1000 companies, as well as government organizations such as the United States Postal Service, Office of Inspector General.

Shiva is the Chairman & CEO of CytoSolve Inc., which provides a revolutionary platform for modeling complex diseases and developing multi-combination therapeutics. His recent efforts at CytoSolve have led to an FDA allowance and exemption on a multi-combination drug for pancreatic cancer, development of innovative nutraceutical products, and numerous industry and academic partnerships. Shiva's earlier research on pattern recognition and large-scale systems development has also resulted in multiple patents, numerous industry awards, commercial products including EchoMail, and coverage by scientific and industry publications.

Shiva serves as Executive Director of the International Center for Integrative Systems, a non-profit research and education foundation dedicated to the application of systems thinking across a range of disciplines. Research on Genetically Modified Organisms (GMOs) is a specific and urgent focus of this foundation. Along these lines, Shiva has met with world leaders including former President Bill Clinton, Prime Minister Narendra Modi of India, and French President Francois Hollande, who have sought his advice on innovative technologies and their applications to food and healthcare systems.

Shiva Ayyadurai is a member of Sigma-Xi, Eta Kappa Nu and Tau Beta Pi. He supports the Shanthi Foundation, which raises money to provide scholarships for education of orphaned girls.

He is also a supporter of non-profit organizations including the Guggenheim Museum, Very Special Arts, National Public Radio, and the National Geographic Society. Ayyadurai lives in Belmont, Massachusetts and enjoys yoga, tennis, animals, art and architecture.