Inventing EMAIL 1978-1981

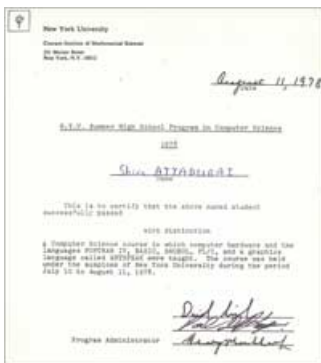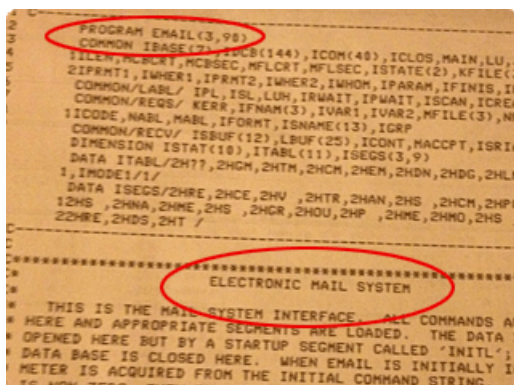V. A. Shiva, Inventor of EMAIL

In the Summer of 1978, V. A. Shiva Ayyadurai (Ayyadurai), then a sophomore in high school was accepted to a gifted students summer program at the prestigious Courant Institute of Mathematical Sciences at New York University, in a program to educate America's finest youth on computer programming. In the Fall of that year, he was offered a position as a research fellow at the University of Medicine and Dentistry of New Jersey (UMDNJ) to develop the world's first Email System. Shiva, then only 14, built the first email system, a system of interlocked parts emulating the full-scale interoffice paper mail system, and received the first U.S. Copyright for EMAIL. He went on to be recognized by the Westinghouse Science Talent Search for this innovation, at a time when few knew of the value of email.

Learning Programming @ NYU, 1978

Professor Henry Mullish of the Courant Institute of Mathematical Science at New York University (NYU), a visionary, who recognized the importance of training America's future engineers and scientists in computer programming, organized a highly selective and intensive 8-week program. This program had 40 openings for students in the New York area. Shiva was one of the few who was fortunate to get accepted, after hearing about the program from Martin Feuerman, a colleague of Meenakshi Ayyadurai (Shiva's mom) at UMDNJ. The program offered both class room training by NYU graduate students and faculty, as well as a rigorous lab component for each of the classes in FORTRAN, PL/I, COBOL, SNOBOL, BASIC, Digital Circuit Design, ARTSPEAK. All of this was done in punch cards on old CDC main frames. Shiva graduated with Distinction and was one of the youngest of the entire group. He also won a special Computer Arts Award for artwork he developed using ARTSPEAK, one of the earliest computer graphic languages.

EMAIL was named in 1978 in FORTRAN IV

The FORTRAN IV compiler at the time being used at UMDNJ had a six-letter character limit on naming variables and subroutines. The operating system had an additional limit of five characters for the name of main programs. "EMAIL" was chosen as the name of the

computer program for the system which would emulate the interoffice, inter-organizational mail system. This printout is just one example of the nearly 50,000 lines of code (there are other such examples on this website), that was submitted to the US Copyright Office and donated to the Smithsonian.

First EMAIL System, 1980

This article appeared in the West Essex Tribune entitled "Livingston Student Designs Electronic Mail System" on October 30, 1980.

His independent study teacher and coordinator at Livingston High School, Stella Oleksiak, was persistent with the Superintendent of Schools, the Principal and other teachers, who originally did not want to allow a student to travel back and forth to work in Newark, NJ, for a variety of reasons. Through her efforts and the support of Dr. Leslie P. Michelson, Shiva was allowed, starting in 1978, to do the independent study. This article was an important one, for it demonstrated to the local school board and others, that the concept of Independent Study could lead to fruitful results. Each day, Shiva traveled nearly 30 miles to UMDNJ.

Westinghouse Award Entry, 1981

This is the original of the Westinghouse Award Entry that Shiva submitted to the Westinghouse Science Talent Search Committee in 1981. The review of this document is what was used to determine the issuance of the Westinghouse Science Talent Honors Award.

By reviewing this document, one can see some of the details of his thinking, design approach and thoughts on where email could go in the future. The document is typewritten. This was at a time when programs like MS Word, Powerpoint, Adobe, etc. did not exist.

Westinghouse Award Finalist, 1981

The Westinghouse Science Talent Search, now known as the Intel Science Talent Search to, has been referred to as the 'Baby Nobels.'"

In 1981, V. A. Shiva Ayyadurai was awarded an Honors Group award for "The Software Design, Development and Implementation of a High-Reliability Network-Wide Electronic Mail System."

MIT Tech Talk, 1981

The incoming Class of 1985 to MIT entered in the Fall of 1981. The front-page article in Tech Talk, MIT's official newspaper highlighted the work of four incoming students, one being the invention of EMAIL.

Even while at MIT, Shiva continued, for a few more years to consult as a Research Fellow for UMDNJ to continue additional work on EMAIL.

First U.S. Copyright for EMAIL, 1982

In 1982, the U.S. Copyright Office issued TXu-111-775, the first Copyright for EMAIL, to Shiva Ayyadurai. At that time, the only protection available for software was through Copyright. The U.S. intellectual property laws, at that time, treated software similar to music, art or literary work. The original Copyright application was submitted in 1980.

COMAND, 1982

Dr. Leslie Michelson, Ph.D., a former physicist was Shiva's mentor, who provided this unique opportunity and access to infrastructure at UMDNJ as well as other colleagues twenty to fifty years older than him. Dr. Michelson recruited Shiva to be a Scholar in his Lab after hearing about his work and results at the NYU Summer program, offered by Henry Mullish. Initially, there was no pay offered, but free lunch at the UMDNJ cafeteria. Later on, he earned $1.25 per hour. The screen you see on the left was the size of the display that one had to work with.

Email User's Manual Copyright, 1982

Every software system needs a User's Manual, so did the world's first email system. At that time, Shiva was everything on the project: software engineer, network manager, project manager, architect, quality assurance AND technical writer.

The User's Manual for which he received Copyright TXu-108-715 was also tested. He wrote and updated multiple versions based on feedback from his user base of doctors. It had to be easy-to-read and accessible to all.
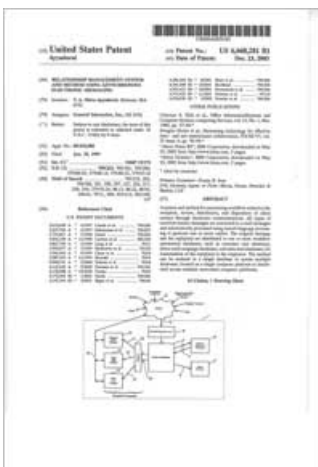
EMS Copyright, 1984

In 1984, the U.S. Copyright Office issued TXu-169-126, the first Copyright for EMS (EMAIL Management System), to (V.A.) Shiva Ayyadurai. The EMAIL copyright had been awarded to Shiva two years earlier. This copyright recognized his additional contribution for creating all the internal tools needed by system administrators to maintain EMAIL and messages long-term, e.g. archiving, password management, etc.

Even in 1984, the only protection available for software was through Copyright. The U.S. intellectual property laws, at that time, treated software similar to music, art or literary work. The original Copyright application was submitted in 1980.

U.S Patent: Relationship Management System and Method using Asynchronous Electronic Messaging, 2003
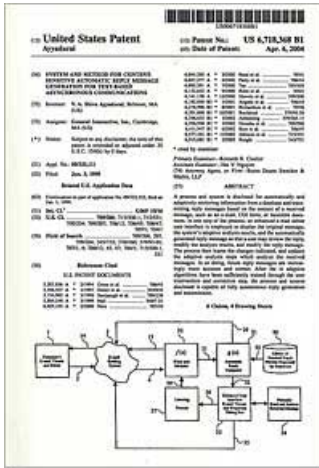

This patent was awarded in recognition for Shiva's contribution to create a holistic and integrated system for electronic management of on-line relationships through the use of ANY asynchronous electronic messages. This broad patent was issued after considerable

deliberation by the USPTO.

Shiva, at one point, was asked to appear in Washington, DC at the USPTO to explain aspects, given the broad protection for **all** asynchronous messaging he was seeking.
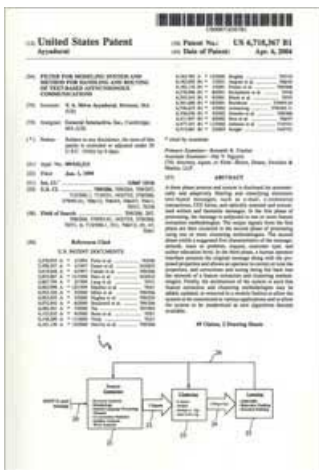
U.S Patent: System and Method for Content-Sensitive Automatic Reply Message Generation, 2004

In 2004, over 20 years, after creating the worlds' first email system, Shiva was issued U.S. Patent #6,718,368 for inventing a method for automatically analyzing an email and formulating a response. This patent was issued to Shiva's company General Interactive, LLC, which developed the product EchoMail. EchoMail became the leading application for intelligent message analysis, sorting and routing used by such companies as Hilton, QVC, Citigroup and others.

The patent enabled the automatic and adaptive retrieval of information from a database while enabling the transmission of reply messages based on content of a received message.

U.S Patent: Filter for Modeling System and Method for Handling and Routing of Text Based Asynchronous Communications, 2004

This patent was awarded to Shiva for developing a unique method to route incoming text-based asynchronous communications. The system applied pattern analysis methods of Feature Extraction, Clustering and Learning, deploying a hybrid and integrated systems model of nearly 19 different technologies in a unique frame work.

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