MIT: Massachusetts Institute of Technology

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The mathematical theory of packet networks enables the Internet to function. It was developed by Leonard Kleinrock while still a graduate student at MIT in the 1960s.

Massachusetts Institute of Technology

The following information is from the MIT Laboratory for Computer Science (LCS) website where there are many interesting links to follow. The MIT goal is to research computer science and engineering. It is dedicated to the invention; development and understanding of information technologies which are expected to drive substantial technical and socioeconomic change.

LCS members and alumni have been instrumental in the development of the ARPANET, the Ethernet, the World Wide Web, time-shared computers, RSA encryption, and dozens of other technologies. Anyone who makes decisions using a spreadsheet sends and receives email, communicates with colleagues through a LAN, or surfs the Web is benefiting from the creative output of a present or former member of LCS.

Research has spawned many companies:

- 3COM Corporation
- Cirrus Logic Inc
- Lotus Corporation
- RSA Data Security Inc
- World Wide Web Consortium

The Laboratory hosts the USA headquarters of the World Wide Web Consortium, an open framework of companies and organizations with the mission to lead the Web to its full potential. LCS brings together faculty, researchers, and students in a broad program of study, research, and experimentation. Its members pursue innovations in information technology that will yield substantive long-term improvements in the ways that people live and work. LCS strives for excellence, relevance, and social purpose. The hallmark of its research is a balanced consideration of technological capability and human utility.

Currently, LCS is focusing its research on the architectures of tomorrow's information infrastructures. In the interest of making computers more efficient and easier to use, LCS researchers are putting great effort into human-machine communication via speech understanding; designing new computers, operating systems, and communications architectures for a networked world; and automating information gathering and organization. LCS researchers are also exploring the boundaries between computer science, biology, and medicine, as they continue to probe the theoretical underpinnings of computer science.

In addition, LCS recently announced the launching of the Oxygen Product an integrated collection of eight new technologies: handheld, wall and trunk computers, a novel net, builtin speech understanding, knowledge access, collaboration, automation and customization. Taken together, these human-oriented technologies will forge a new computing metaphor that it is hoped will mark an important shift from the desktop icons of today.

This five-year research program; done in conjunction with MIT the Artificial Intelligence Laboratory. Draws upon 60-research projects, the Lab is currently pursuing. LCS celebrated its 35th anniversary in April 1999, with the announcement of a New Future Home (Note the buildings name) on the MIT Campus, currently being designed by architect Frank Gehry. The Laboratory remains committed to lead the computer revolution, expanding the boundaries of today's information technology, forecasting, and redefining the capabilities of the computer.

The Laboratory for Computer Science was founded in 1963, as an inter-departmental research laboratory of MIT, with funds from the U.S. Defence Department, spurred on by the surprise launch of the Soviet satellite Sputnik. Research at MIT spawned Multiple Access Computing and Machine Aided Cognition known as Project MAC its mission was to develop a computer system, made accessible to a large number of people, and to exploit the computer as an aid to research, and education.

The initial result of this effort was time-shared computers, and the operating system known as MULTICS, which was later developed into UNIX MULTICS. It laid the foundation for many of today's basic design concepts for software systems. Such as line, and page editors, the directory system of organizing computer files, virtual memory, and computer-aided design. This first decade of LCS research also saw the development of the original TCP/IP networking protocol, as well as the fundamental technology that has become the Internet.

Building on these advances in computing, LCS expanded its research by initiating studies in clinical decision making, distributed systems, and languages, parallel processing systems, object-oriented programming, computer languages, and architectures for parallel systems, the development of local area networks, and human-computer speech understanding, amongst other areas of study.

Additional LCS-pioneered concepts ultimately achieved widespread acceptance, and commercial success, including the development of the first commercial spreadsheet program, VisiCalc; the RSA encryption algorithm, for secure computer transactions; the first workstation Unix Ports; X-Windows, a widely adopted user interface system; various commercial spoken language systems: and much more.

In 1994, LCS became home to the World Wide Web Consortium, a standard's organization, which develops the common protocols, which promote the Web's evolution, and ensure its interoperability. Over 4000, researchers and students, have contributed to the work of the Lab in its 35-year history. Some of their most significant work is visible in a Historical Timeline put together for the Lab's 35th anniversary.

Most members of LCS are affiliated with either, the Department of Electrical Engineering and Computer Science EECS, or the Department of Mathematics at MIT. The Lab has 65 faculty, and senior research staff members, about 50 visiting faculty members, postdoctoral students, and research affiliates, and 180 graduate students. One hundred undergraduates, working under MIT's Undergraduate Research Opportunity Program, and are intimately involved in LCS advanced research projects. LCS is under the direction of Michael Dertouzos; with Anant Agarwal, and Victor Zue: serving as Associate Directors...