

CURRICULUM VITAE

JOSEPH PARADISO

Joseph Paradiso joined the MIT Media Laboratory in 1994, where he is now the Alexander W. Dreyfoos (1954) Professor in Media Arts and Sciences directing the Responsive Environments Group, which explores which explores how sensor networks augment and mediate human experience, interaction and perception. This encompasses wireless sensing systems, wearable and body sensor networks, energy harvesting and power management for embedded sensors, ubiquitous/pervasive computing and the Internet of Things, human-computer interfaces, human-sensor interaction with the built environment, augmented/virtual/cross-reality, and interactive music/media. He has also served as co-director of the Things That Think Consortium, a group of Media Lab researchers and industrial partners examining the extreme future of embedded computation and sensing, and is now serving as the Media Lab's Associate Academic Head. As faculty advisor to the Media Lab's Space Initiative, Paradiso has recently launched a host of space-based projects in his group, including several running on the International Space Station and others aimed at lunar operation.

Paradiso received a B.S. in electrical engineering and physics summa cum laude from Tufts University in 1977, and in 1981 completed a Ph.D. in physics from MIT with Prof. Ulrich Becker as a K.T. Compton Fellow in the Nobel Prize-winning group headed by Prof. Samuel C.C. Ting at the Laboratory for Nuclear Science. His dissertation research was based on an experiment measuring high-energy muon pair production at the European Center for Nuclear Research (CERN) in Geneva, Switzerland. From 1981 to 1984 he conducted post-doctoral research at the Swiss Federal Institute of Technology (ETH) in Zurich, where he developed precision drift chambers and fast electronics for the inner tracker of the L3 experiment at CERN/LEP. From 1984-1994 he was a physicist at the Draper Laboratory in Cambridge, Massachusetts, where, as a member of the NASA Systems and Advanced Sensors and Signal Processing Directorates, his research encompassed control algorithms for orbital and re-entry spacecraft, sonar systems for advanced underwater applications, fractal-based image processing, and high-energy physics detectors. From 1992-1994, he directed the development of precision alignment sensors for the GEM muon detector at the Superconducting Supercollider, and was a visiting scientist at ETH-Zurich in 1991 and 1992 to design fast pattern-recognition algorithms for triggering an electromagnetic crystal calorimeter at the CERN Large Hadron Collider (LHC). In addition to his research and academic career, Paradiso has also been designing electronic music synthesizers and composing electronic music since 1975, and long been active in the avant-garde music scene as a producer of electronic music programs for non-commercial radio. He has designed and built one of the world's largest custom modular synthesizers (which has been in active installations at Ars Electronica in Linz and the MIT Museum), has designed MIDI systems for internationally-known musicians such as Pat Metheny and Lyle Mays, and is a well-known authority on electronic musical controllers.

Paradiso has published over 350 academic papers and technical reports and has over 20 issued patents on topics that involve sensor networks, ubiquitous computing, energy harvesting, low power electronics, interactive media, computer music, high-energy physics, and spacecraft systems. He often lectures and consults internationally in these areas. His installations have also been shown at many notable worldwide artistic venues, ranging from the Ars Electronica Center in Linz, Austria to the Museum of Modern Art in Manhattan.