Principal Researcher	Kokichi Sugihara	Number of Researchers	13
Research Institution Department Title	Professor, Graduate School of Information Science and Technology, The University of Tokyo	Location of Institution	Bunkyo-ku, Tokyo

Title of Project	Construction of a Superrobust Computation Paradigm
Abstract of Research Project	The goal of this project is to survey existing robust computation techniques in a wide area of scientific computation, to extract a unifying principle for robust computation, and thus to construct an interdisciplinary paradigm for designing robust algorithms in various fields of computation. The prefix "super" in the project title means that we are aiming at an interdisciplinary and unifying principle in the above mentioned sense. The project will cover robust techniques in simulations of physical phenomena,parallel computations, computations for control, geometric computations, computations for discrete optimization, computations for coding, and related areas, which have been developed by the researchers participating in the project, and will try to extract a common principle that might be based on something like the "maintenance of the structural consistency" that should be satisfied by individual objects to which the computations are applied. The paradigm will cover not only conventional digital computations but also new computational techniques such as quantum computations and molecular computations.
References	Kokichi SUGIHARA: Computational Geometry in Engineering (in Japanese), (Advanced Electronics Series II-2), Baifu-kan, Tokyo, 1994. Kokichi SUGIHARA: FORTRAN Programming in Computational Geometry (in Japanese), Iwanami Shoten, Tokyo, 1998.

Term of Project	Fiscal years 2003-2007 . (5years)					
Budget	FY2003	FY2004	FY2005	FY2006	FY2007	TOTAL
Allocation (in thousand of yen)	17,300	20,200	17,000	18,400	17,600	90,500
Homepage Address	http://www.simplex.t.u-tokyo.ac.jp/					