



Guide to the Harwood G. Kolsky Papers

Dates: 1943-1998

Extent: 26 linear feet in 20 cartons and one oversized box

Collection number: X3021.2005

Accession number: 102658131

Processed by: Jennifer Harvey with the assistance of Elizabeth Borchardt

Abstract

The Harwood G. Kolsky collection is comprised of documents related to the development of super computers, microprocessors and microcomputers, computer modeling, digital image processing, computer programming languages, as well as materials related to teaching computer architecture and computer history. The collection primarily consists of technical papers and reports, manuals, notes, promotional material, and correspondence related to Los Alamos National Laboratory and International Business Machines (IBM) Corporation.

Administrative Information

Access Restrictions

The collection is open for research.

Publication Rights

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Preferred Citation

[Identification of Item], [Date], Harwood G. Kolsky papers, Lot X3021.2005, Box [#], Folder [#], Computer History Museum

Provenance

Harwood G. Kolsky donated his papers to the Computer History Museum in 2005.

Repository

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Mountain View, CA 94043 USA
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www.computerhistory.org

Biographical Note

Harwood G. Kolsky, an emeritus professor of computer engineering from the University of California, Santa Cruz (UCSC), was a physicist who became a computer scientist well before that field was a recognized department of academic learning. He worked on many early computers and their applications and architectures. Later in his career he directed a variety of projects involving programming languages, scientific applications, and digital image processing.

Kolsky was born on January 18, 1921. He received a B.S. degree in Engineering Physics from the University of Kansas in 1943. He was in the U.S. Army's Central Pacific Signal Corps from 1943 to 1946. In 1950 he was awarded a Ph.D. in Physics from Harvard University.

In 1957, after seven years at the Los Alamos National Laboratory, he joined International Business Machines (IBM) working out of the Poughkeepsie, New York facility. He was a member of the product planning group for the STRETCH (IBM 7030) computer. In 1959, he became assistant manager of the IBM Federal Systems Division (FSD) office in Omaha, Nebraska. Kolsky was named manager of the systems science department of IBM's San Jose Research Laboratory in 1961. In 1962, he headed an advanced technology group in the Advanced Systems Development Division at Los Gatos, California. He joined the Palo Alto Scientific Center when it was formed in 1964 as manager of the atmospheric physics group. Later, he headed projects in programming languages, microprogramming, and digital image processing.

Dr. Kolsky was named an IBM Fellow in 1969. He served on the IBM Corporate Technical Committee at Armonk, New York from 1974 to 1975. He was also head of the Board of Consultants for the IBM European Scientific Centers. He published over 30 papers and was a member of four professional societies.

In 1985, he joined the newly-formed UCSC Computer Engineering department as a visiting professor. In 1986, he retired from IBM and began a new career as a full-time professor at UCSC. At UCSC, Kolsky helped manage research projects and taught courses in computer architecture and computer history until his retirement in 1996.

Kolsky is married to Frances Cilek Kolsky, also a 1943 graduate of the University of Kansas. She taught high school while Harwood was in the Army. The Kolskys have four children and three grandchildren.

Scope and Content Note

The Harwood G. Kolsky collection contains his personal papers accumulated throughout his professional life as a physicist and computer scientist. The papers are arranged chronologically from earliest to latest date of creation, and are mostly comprised of technical papers and reports, manuals, notes, promotional material, and correspondence. They relate to all aspects of his professional life.

Most of the early papers document Dr. Kolsky's professional and personal experiences living and working in Los Alamos at the National Laboratory. The largest group of materials relate to his career with IBM and include technical reports and papers, brochures and promotional materials, as well as correspondence and notes related to significant projects. Projects documented include the development of the STRETCH (IBM 7030) computer, various computer simulation projects, and digital image processing projects.

His professorship at UCSC is documented through campus publications, course documents, and lecture notes. Of note are his lecture materials related to computer history.

Some items related to the IBM 7030 (STRETCH) computer have been scanned and are available on the Computer History Museum's website.

Separated Items

Photographs, software, and books can be found in the CHM collections database at <http://www.computerhistory.org/search/>.

Indexing Terms

Computers

Computer Industry

Computer simulation

Digital image processing

Image processing Digital techniques

Programming languages (Electronic Computers)

Kolsky, Harwood G.

International Business Machines Corporation

International Business Machines Corporation. Federal Systems Division

International Business Machines Corporation. San Jose Research Laboratory

International Business Machines Corporation. Advanced Systems Development Division

International Business Machines Corporation. Palo Alto Scientific Center

IBM 7030 (Computer)

Los Alamos National Laboratory

Supercomputer industry

Supercomputers

University of California, Santa Cruz. Dept. of Computer Engineering

Folder List

Harwood G. Kolsky papers

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<u>Folder Number</u>	<u>Title</u>	<u>Date</u>
Box 01		
102663090	Introduction to theory of relativity: Class notes	1943
102632748	Notes on statistical mechanics: Lecture class notes	1945
102635203	Handbook for IBM machines: Numerical computation	1946
102663195	Report on the ENIAC (Electronic Numerical Integrator and Computer): Operating manual	1946
102632782	1949-50 Association of Computing Machinery (ACM) Papers	1949
102634664	Plastic, elastic papers	1949
102635204	A manual for coding on the Standards Eastern Automatic Computer (SEAC)	1950
102687691	Boundary problems for linear partial differential equations lecture notes	1950
102634665	Civil Defense brochures	1950
102663091	Collection of molecular beam papers	1950
102634668	Collection of papers 1940s-50s (mathematics, statistics, computer structures, physics)	1950
102663092	Los Alamos colloquium, lectures, et.: Notes	1950
102636216	Nuclear physics and X-rays: Laboratory manual	1950
102635222	Papers about the Standards Eastern Automatic Computer (SEAC)	1950
102636217	RF Spectrum of H ₂ in magnetic field	1950
102635530	Card programmed electronic calculator: Preliminary manual of information	1951
102634574	Los Alamos scientific laboratory (LASL) annual recruiting brochures	1951
102635549	Los Alamos scientific laboratory (LASL) manual for card programmed calculator (cpc) mod I	1951
102634674	Maniac computer related materials and notes	1951
102663093	Programming manual for the UNIVAC System Part I	1951
102663095	Circle computer, Teleducer, Monroe short-cut statistical methods, symbolic design of digital computers	1952
102634709	Type 701 Electronic Data Processing Machines (EDPM): Preliminary operator's reference manual	1952

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102663099	Conversion for the IBM electronic data processing machines: Type 701 and associated equipment	1952
102663098	International Business Machines (IBM) 701 class related materials	1952
102663097	Preliminary report on the IBM Electronic Data Processing Machine	1952
102635928	Real and complex roots of algebraic equations on the IBM 650	1952
102635516	2D-Hydrodynamics conference--Notes, famous physicists	1953
102635225	A shorthand coding system for the IBM 701 calculator	1953
102663100	Colloquium lectures, etc.--Notes, famous physicists	1953
102649376	High Energy Phenomena	1953

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Box 02		
102687690	Hydrodynamic instability	1953
102663152	IBM 650 magnetic drum data-processing machine: Manual of Operation	1953
102632810	IBM 701 speedcoding system	1953
102636215	Los Alamos Scientific Laboratory (LASL) 701 Utility Programs	1953
102634744	Magnetic Core devices: Early storage device papers	1953
102635482	Math and computing papers	1953
102635612	Memorandum about computer system design: Asynchronous control	1953
102663103	Numerical analysis lecture notes	1953
102663151	A method for the numerical solution of transient hydrodynamic shock problems in two space dimensions	1954
102663105	International Business Machines (IBM) 701 users' class notes and related materials	1954
102635495	Memos and press releases related to the Oppenheimer security case at the Los Alamos Scientific Laboratory	1954
102634445	UNIVAC Brochures	1954
102632819	Various reports and materials related to the International Business Machines Corporation (IBM) systems 701A & 704	1954
Box 03		
102663101	Consultant's reports: Notes and memos 1954-74	1954
102663102	Nuclear scattering of high energy neutrons and the optical model of the nucleus	1954
102634749	1955 heat transfer and fluid mechanics institute: Reprints of papers	1955
102635630	704 electronic data-processing machine: Manual of operation	1955
102634745	A career for you in IBM	1955
102635224	Dual coding system for IBM 701 (a system that allowed the use of floating point arithmetic on the IBM 701)	1955
102634748	Parametric methods in numerical solution of differential equations	1955
102635524	Radio Corporation of America (RCA) BIZMAC brochures	1955
102634746	Rocket-propelled airplanes	1955
102634747	Solution of transport equation by sn approximations	1955
102634711	A 704 primer or coding in 10+ easy lessons	1956
1026034480	Computer Brochures (ERA, Bendix, Underwood, Librascope, Hughs, Burroughs, Readix, Datatron, National, Heath, Reeves, Electronic Associates and others)	1956
102634713	Eastern Joint Computer Conference	1956
102634712	Los Alamos Scientific Laboratory MANIAC II	1956
102635202	Nuclear test sites: Enewetok and Nevada	1956
102679286	Tape or memory coupled systems	1956
102635531	The Floco Assembly Program Manual for the IBM type 704 calculator	1956
102634714	Useful debugging programs for IBM 704	1956

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Box 03		
102634717	Various reports, papers and computer brochures related to electronic and digital computers, national defense, Moseley autograf, Librascope, Teletype, and others	1956
Box 04		
102634676	International Business Machines (IBM) 704 SHARE program reference materials and manual	1956
102634677	Magnolia Petroleum Company colloquium lectures in the pure and applied sciences: Some stochastic problems in physics and mathematics	1956
102687492	Neutron diffusion--Sn method	1956
102634675	Nuclear, plasma engine designs	1956
102634716	Plasma physics lecture and notes	1956
102679171	The Thermodynamic properties of 54 elements considered as ideal monatomic gases	1956
102634720	Cryogenic Memory	1957
102634721	Papers about International Business Machine Corporation's (IBM) 704 transistor circuits	1957
102634015	Stretch simulation: planning & design studies	1957
Box 05		
102679281	International Business Machines (IBM) Machine Comparisons, multiple	1957
102679290	A numerical solution of a spherical blast wave utilizing a completely tabular equation of state	1958
102679292	Algae 1 compiler for IBM 704, 704 commands grouped according to the type of operation, and various mathematical tables	1958
102679293	Atoms for Peace collection of papers	1958
102679295	Engineering faculties conference on digital computers related materials	1958
102679298	IBM 650 data processing system bulletins	1958
102679282	International Business Machines Corporation (IBM) 7090 early papers	1958
102679297	International Business Machines Corporation (IBM) interdivisional computation seminar, July 9 - 10, 1958, papers presented at seminar	1958
102679294	Philco Transac related materials	1958
102679291	Proceedings: IBM interdivisional computation seminar and notes	1958
102679283	Read only memory computer: Computer design proposal	1958
102634622	Roster of members	1958
102679557	Various articles and materials from 1958-1969 dealing with shocks, waves, simulations, denotation, reactors, and more	1958
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102679280	Competitive computers clippings, reports and notes	1959

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102663158	FLOCO II Manual	1959
102663160	IBM 7070 data processing system bulletin: Operation codes	1959
102679300	Los Alamos Scientific Lab utilities for use with the International Business Systems (IBM) 7090 & 7030	1959
102679289	Numerical analysis lectures and notes	1959
102679288	Statistical decision problem papers and notes	1959
102663159	The DSN Code	1959
102663157	Two-dimensional hydrodynamic calculations	1959
102634715	Weather system 433-L, various papers	1959
102679285	438L Data handling experiment procedures	1960
102663168	9-ANGIE--A two-dimensional, multigroup, neutron-diffusion-theory reactor code for the IBM 709 or 7090	1960
102663164	Dynamics of compressible fluids	1960
102663166	Inversion of 3-diagonal compound matrices	1960
102663161	Los Alamos Scientific Laboratory (LASL) documentation of utility programs for 704	1960
102663167	Neutron diffusion theory programs and their application to simple critical systems	1960
102679287	Programming manual volume I executive control program I/O processor	1960
102663162	Programming manual volume II formatted file system	1960
102663163	Programming manual volume III unformatted file system	1960
102679457	Proposal for the establishment of an automatic translation facility	1960
102663165	Stability of difference equations selected topics	1960
102663169	The solution of the simplest centered difference approximation to Poisson's differential equation for a rectangular grid of equally spaced points	1960
Box 07		
102679563	Fortran bulletin: Fortran modifications/machine language instructions in Fortran programs	1960
102663172	From the Dirks D-1, D-2, D-3 and D-20 papers, a rough draft of a report	1960
102634585	GPD technical record: Digital computers--logical principles and operation	1960
102663171	Lawrence Radiation Laboratory (LRL) and International Business Machines (IBM) meeting notes regarding high speed computer and system requirements	1960
102663173	Machine processing language: A table-lookup machine for processing of natural languages; The stenewriter system (abridged), plus two other reports	1960
102663170	Seminar on codes for reactor computations, Vienna, April, 1960: Numerical solution of quasi-linear equations	1960
102663174	A 650 demonstration: Simulation of bank teller waiting lines using a stochastic banking model; A capital investment program for the IBM 1620	1961

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Box 07		
102679463	Analysis of GPD San Jose production control Phase I--the present system; Phase II: future Systems Requirements	1961
102679464	International standards for data transmission	1961
102679470	Introduction to scientific computing techniques and procedures: Student notes	1961
102679471	Isothermal squeeze films	1961
102679458	Lagrangian difference approximations for fluid dynamics	1961
102687737	Lagrangian hydrodynamic computations and molecular models of matter	1961
102635226	LASL in the news: public relations news clippings	1961
102679467	Meeting notes regarding visitors to International Business Machines Corporation (IBM) Advanced Systems Development Division (ASDD) laboratory	1961
102663175	Multiple business system reports: MBS benefits to IBM and Technical status of the multiple business system	1961
102635673	Nearest neighbor hydrodynamics calculation	1961
102679468	Notes on automatic information retrieval	1961
102663176	Nuclear computing technical bulletins 1-5	1961
102679462	Numerical solution of the one-dimensional hydrodynamic equations in an arbitrary time-dependent coordinate system	1961
102679461	Numerical solution of the one-dimensional Lagrangian hydrodynamic equations	1961
102679465	The inventory management simulator for the IBM 1620	1961
102679460	The IVY System	1961
102679459	The particle-and-force computing method for fluid dynamics	1961
102679466	USAF progress in automatic language translation	1961
102679469	Walnut document storage system related materials	1961
102679478	A proposed modification of the available momentum region in Thomas-Fermi theory	1962
102679477	Digital computer needs in universities and colleges: A report of the Committee on Uses of Computers, National Academy of Sciences-National Research Council	1962
102679472	Hurry, hurry, hurry	1962
102679476	Principles of operations type 701 and associated equipment	1962
102679474	Technical highlights publications	1962
102635238	Technical proposal for logical organization and design of a parallel network computing system	1962
102679475	The operational characteristics of the processors for the Burroughs B 5000	1962
102679479	Three-dimensional Cartesian particle-in-cell calculations	1962
102679473	Various papers regarding manufacturing control and automation	1962

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Box 08		
102635239	Various International Business Machines (IBM) keypunch references: Manuals, papers and related materials	1956-1971
102635675	Various papers related to International Business Machines (IBM) Parallel Network Digital Computing (PNDC) system	1960-1966
102679510	Collection of papers of 1960s: s/360, parallel, memories, DEC	1960-1987
102679483	Four reports concerning the analysis of San Jose GPD production control; Requirements generation, explosions, and bills of material	1961-1963
102679480	A common language for hardware, software, and applications	1962
102679482	A punched-card machine method for management of nuclear materials	1962
102679495	Computer class notes regarding computer organization and systems	1962
102679481	Difference equations for plane thermal elasticity; Two-frequency nonlinear Taylor instability	1962
102687740	General description of a low-cost computer organization based on the dynamic streaming of records	1962
102679488	Highly parallel machines	1962
102679491	Miscellaneous facilities of extended ALGOL for the Burroughs B 5000	1962
102687739	Some mathematical aspects of parallel computation	1962
102679489	Status fiscal year 1962	1962
102634737	Table lookup computers	1962
102679490	Various papers regarding a hypothetical computer	1962
102679494	Preliminary papers describing a streaming processor	1962-1964
102679487	Early displays and plotters	1962-1969
102679496	Cocke Fortran compiler notes	1962-1987
102679500	General information manual: An introduction to engineering analysis for computers	1963
102679508	IBM 7090/7094 IBSYS operating system version 13 Macro Assembly Program (MAP) language	1963
102679503	Lecture notes and references on computer history	1963
102679506	Management control and information processing: A description of how data processing procedures are developed at the Fireman's Fund Insurance Companies	1963
102679504	Summary report managerial opinion survey 1963	1963
102679499	Theory of correspondence between fluid dynamics and particle-and-force models	1963
102679501	Various materials related to the Atomic Energy Commission (AEC) and International Business Machine (IBM) computer situation	1963
102679502	Various papers describing a general linear sequential network	1963
102679497	Extended ALGOL reference manual for the Burroughs B 5000 and other related materials	1963-1964
102679484	Inventory control reports	1963-1964
102679507	Stanford computer center related materials	1963-1968
102679509	An analysis of the likely effects of a large core storage upon computer programs at Lawrence Radiation Laboratory, Livermore, California	1964

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102679498	Burroughs B 5500 information processing systems: Extended ALGOL reference manual	1964
102679512	Burroughs B 5500 information processing systems: reference manual	1964
102679511	Burroughs B 5500 information processing systems: Stream procedure reference manual	1964
102635631	Concerning computer storage organization and notation	1964
102687738	Tables, flow-charts and program logic	1964
102679505	The IBM system/360 model 92: The overlap design of the central processing unit	1965
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102634605	A compiler and machine organization for parallel processing of algebraic expressions	1964
102634606	BASIC: A manual for BASIC, the elementary algebraic language designed for use with the Dartmouth Time Sharing System	1964
102679515	Comparison of finite difference expressions used in Lagrangian fluid flow calculations	1964
102679524	Computer organization for array processing	1964
102679523	IBM System/360 principles of operations manual	1964
102679522	IBM technical handbook of systems engineering	1964
102635999	Lawrence Radiation Laboratory (LRL), Livermore, California and International Business Machines (IBM) meeting notes and related materials spanning 1964-1971	1964
102679514	Numerical calculation of time-dependent viscous incompressible flow of fluid with free surface	1964
102679513	Numerical fluid dynamics using the particle-and-force method	1964
102679517	Numerical simulation of the earth's atmosphere	1964
102679520	Scientific and engineering computing: A state of the art survey IBM scientific marketing	1964
102687741	The stored program calculator (SPC): A small high-performance computer	1964
102679525	Various papers about computer organization and notation	1964
102679526	Various papers about exotic computer languages: Nial, Unix, Jovial, Opcol	1964
102679527	Various papers about Iverson notation and A Programming Language (APL)	1964
102634608	Various papers describing Scientific Center projects	1964
102636182	Various papers related to International Business Machines (IBM) announcement regarding System/360	1964
102679516	Various papers related to the Cypress Digital Image System	1964
102679521	Various papers related to the Stanford computer science class	1964
102687742	Various papers related to the Stanford computer science project	1964
102679519	Various papers related to the streaming processor project	1964

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Box 09		
102634603	Various papers relating to the International Business Machines (IBM) System/360 announcement: Collection of New Production Line (NPL) 360 papers	1964
102634604	Various papers relating to the International Business Machines (IBM) System/360 model 92	1964
102634607	Various Scientific Center progress reports	1964
102679534	A two dimensional time dependent numerical study of rotational couette flow which is periodic in the axial direction	1965
102679535	Derivation of a generalized von Neumann pseudo-viscosity with directional properties	1965
102687743	HASTI: A numerical calculation of two-dimensional Lagrangian hydrodynamics utilizing the concept of space-dependent time steps	1965
102679529	Nuclear physics application summary: The application, the instrumentation, the usefulness of the 1800	1965
102687744	Numerical calculation of surface waves: A modified ZUNI code with surface particles and partial cells	1965
102687745	Rezone: A proposal for accomplishing rezoning in two-dimensional Lagrangian hydrodynamics problems	1965
102687746	The MAC Method: A computing technique for solving viscous, incompressible, transient fluid-flow problems involving free surfaces	1965
102679528	Various papers related to the Advanced Computer System (ACS) an International Business Machines (IBM) super computer project	1965
Box 10		
102679542	An introduction to Fortran and ALGOL programming	1965
102679553	Computer system design notes	1965
102679545	Correspondence and notes regarding the Fall Joint Computer Conference of the International Federation for Information Processing (IFIP) societies	1965
102679543	Euler: A generalization of ALGOL and its formal definition	1965
102687748	IBM 7090/7094 IBSYS operating system version 13 Fortran IV language	1965
102687747	IBM 7090/7094 IBSYS operating system version 13 operator's guide	1965
102687749	IBM 7090/7094 IBSYS operating system version 13 system monitor (IBSYS)	1965
102679554	MAP Course Notes	1965
102679544	Materials from the International Federation for Information Processing (IFIP) Congress of 1965	1965
102679559	NSA ALGOL: An extended, machine-independent version of ALGOL 62 programmer's reference manual	1965
102679552	On classification and superposition principles for nonlinear operators	1965
102679550	Palo Alto Scientific Center Progress Reports	1965
102679558	Possible performance improvements by microprogramming for system/360 models 40, 50, and 65	1965
102679551	Stanford Computation Center reference manual	1965

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102679537	Stanford University Faculty/Staff Directory 1956-66	1965
102679541	Two papers regarding parallelism, networking and the Parallel Network Digital Computer (PNDC): Parallelism, PNDC and computing; The IBM Parallel Network Digital Computer: PNDC	1965
102679546	Various papers regarding the Computer Science department of Stanford University	1965
102679547	Various papers related to associative memory computers	1965
102679538	Various papers related to the Advanced Computer System (ACS) an International Business Machines (IBM) super computer project	1965
102679539	Various papers related to the International Business Machines Weather Study Committee and the National Center for Atmospheric Research (NCAR) meetings	1965
102679549	Various papers related to the management of the Palo Alto Scientific Center 1965-79	1965
102679548	Various papers related to the management of the Palo Alto Scientific Center 1965-85	1965
102679536	Various papers related to the Stanford Computer Center	1965
102679540	Various weather model references	1965
102679560	Burroughs B 5500 Information Processing Systems extended ALGOL language manual	1966
102687750	Computation of charge distribution on or near equipotential surfaces	1966
102679564	Finite difference methods of solution of nonlinear flow processes with application to the Benard problem	1966
102679561	Nuclear Computing Technical Bulletin	1966
102679565	Numerical study of large amplitude free surface motions	1966
102679566	System/360 scientific subroutine package (360A-CM-03X) programmer's manual	1966
102679562	The particle-in-cell method for the calculation of the dynamics of compressible fluids	1966
102634620	Various papers about the Pipeline Organization Processor (POP)	1966
102634619	Various reports about the Super-Machine	1966
102679567	Weather Study Reports 1966-67	1966

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102679284	A contribution to the development of ALGOL	1966
102634621	APL\360 terminal system: Instructions for operation	1966
102679568	Clippings relating to computers from various news sources	1966
102679571	Computer requirements in meteorology	1966
102679570	IBM system/360 job control language	1966
102634624	International Business Machines (IBM) news bulletins dated 1966 - 1979	1966
102634623	Numerical methods hydrodynamics class notes Stanford class ME 240b	1966

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102679569	Various materials related to Stanford University computer science course 136, Autumn quarter 1966	1966
102679573	Collections of International Business Machines (IBM) technical reports related to information retrieval; SDI bibliography-1	1967
102679582	Copies and reprints of various published International Business Machines (IBM) scientific reports	1967
102679586	Data and systems requirements in meteorology: A survey of the systems problems and trade-offs which face present and future worldwide weather networks	1967
102679574	Fortran BKW: A code for computnig the detonation properties of explosives	1967
102679577	Fortran SIN: A one-dimensional hydrodynamic code for problems which include chemical reactions, elastic-plastic flow, spalling, and phase transitions	1967
102679575	Heuristic stability theory for finite difference equations	1967
102679585	Implementation of numerical weather forecasting on a system 360, model 65 with an array processor (2938, model 2)	1967
102679584	International Business Machines (IBM) Palo Alto scientific center activities reports '67-69	1967
102679583	International Business Machines (IBM) Palo Alto scientific center activities reports and memoranda, '67-86	1967
102679578	One-dimensional elastic-plastic calculations for aluminum	1967
102679581	The Turing machine, draft version of report	1967
102679576	Various International Business Machines (IBM) publications relating to data processing applications and library processes	1967
102679572	Various materials related to an International Business Machines (IBM) library survey	1967
102679579	Various materials relating to the International Business Machines Corporation (IBM) Advanced Computing Systems (ACS) project	1967
102679580	Various papers relating to the International Business Machines Corporation (IBM) array processors	1967
102679590	A Lagrangian method for calculating the dynamics of an incompressible fluid with free surface	1968
102679591	An atmospheric general circulation model benchmark for the University of Illinois: ILLIAC IV	1968
102679592	Collection of materials related to the ILLIAC IV	1968
102679593	FSD parallel processor development project	1968
102679588	International Business Machines (IBM) scientific marketing newsletter System/360 model 9; Document analyzing trends in the development of super computers	1968
102679587	Photocopies of published papers relating to satellite orbit	1968
102679589	Proceedings of the APS topical conference on numerical simulation of plasma, September 18-20, 1968	1968

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102679598	A status report: A primitive equation limited area "fine mesh" numerical weather prediction model	1968
102679599	APL\360 User's Manual	1968
102679600	Computer synthesis of holograms for 3-D display	1968
102679596	International symposium on high-speed computing in fluid dynamics	1968
102679594	Programming notation in systems design	1968
102679595	Project manager's documentation guide	1968
102679601	Subroutines for computing the parameters of the electromagnetic radiation scattered by a sphere	1968
102679597	Various papers related to the Palo Alto scientific center laboratory system and laboratory automation	1968
102679620	A manual for managers of IBM scientific centers of the World Trade corporation, draft	1969
102679611	Analysis of the FNWF numerical ray-tracing and sound intensity schemes	1969
102679610	Application of the finite fourier transform methods to the solution of finite difference equations and pictorial data interpretation	1969
102679613	Four documents regarding the plasma physics project	1969
102679615	IBM system/360 Basic Fortran IV language	1969
102679619	IBM system/360 operating system introduction	1969
102679621	IBM/GGC-3--Version of GGC-3 and related auxiliary codes for IBM system/360	1969
102679608	Investigation of mesoscale meteorology and air pollution dynamics (Project IMMAD)	1969
102679612	Management science in IBM: An annual report, 1969	1969
102679618	Meteorology lecture materials	1969
102679606	Numerical methods for fluid dynamics, an annotated bibliography	1969
102679616	Reprint of article from the Journal of Atmospheric Sciences: Numerical simulation of weather and climate	1969
102679614	Scientific marketing newsletters	1969
102679617	Sparce Matrix Proceedings	1969
102679602	The University-military complex: A directory and related documents	1969
102679605	Turbulence Distortion in a nonuniform tunnel	1969
102679604	Two documents addressing security of computing facilities and privacy	1969
102634641	Two papers: Effect of coarseness of the integration increment on the calculation of the radiation scattered by polydispersed aerosols; The problem of multiple scattering in a planetary atmosphere	1969
102679603	Various documents related to the futhre of computer architecture	1969
102634642	Various materials regarding the Delphi Technique	1969
102679607	Various papers on relativity theory	1969
102679609	Various papers regarding numerical weather simulation lectures	1969
102679627	An APL machine	1970
102679625	Ecology project seminar documents and notes	1970

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Box 12		
102679623	Fluid dynamics: An introductory text	1970
102679626	Problem solving techniques	1970
102679622	Proceedings IBM Fellow conference	1970
102679624	Transport theory of turbulence	1970
Box 13		
102679635	Air pollution from automobile sources: a state-of-the-art survey	1970
102679634	An implicit finite-difference method for a simplified weather model	1970
102679636	An introduction to computer simulation in applied science	1970
102679630	Major trends in large scientific computing	1970
102679628	Multiprocessor solution of some AEC problems	1970
102679633	Numerical simulation of weather and climate (no. 4 & 5)	1970
102679631	Scientific center 1970 projects	1970
102679632	Scientific computing newsletter 1970	1970
102679629	Transform method for the calculation of vector-coupled sums: application to the spectral form of the vorticity equation	1970-1974
102679640	APL microprocessor project memos and reports	1971
102679643	APL-meteorology problem	1971
102679637	Articles by "Blaise Pascal" concerning gambling	1971
102679641	CP/CMS class	1971
102679650	Historical APL listings	1971
102679638	Memos dealing with high performance computing	1971
102679644	Mesoscale meteorology and air quality dynamics	1971
102679642	Micron: an integrated performance tool; Use of writable control store for finding and eliminating program bottlenecks	1971
102679649	MPL/145: a language and compiler for system/370 model 145 microprogramming	1971
102679646	PDELAN user's manual version I	1971
102679639	Reports to the scientific center strategy board about various European scientific centers	1971
102679645	Scientific computing newsletter 1971	1971
102679647	Supporting Fortran on an APL-based higher level system	1971
102679648	The efficient evaluation of array subscripts of arrays	1971
102679682	A numerical study of buoyancy induced turbulence	1972
102679690	An APL implementation of the DENDRAL algorithm	1972
102634636	APL microcode and applications	1972
102634635	APL task group final report	1972
102679683	Global weather modeling with vector spherical harmonics	1972
102679686	Global weather modeling with vector spherical harmonics report no. 1	1972

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Box 13		
102679684	Global weather modeling with vector spherical harmonics report no. 2	1972
102679685	Preliminary report on the application of vector spherical harmonics to numerical weather prediction and related problems	1972
102634633	Scientific center marketing newsletters	1972
102679681	Scientific center project reports	1972
102634634	IBM organization charts 1972-90	1972-1990
102679687	Weather systems department IRAD report 1972 volume I	1973
102679688	Weather systems department IRAD report 1972 volume II	1973
102679689	Weather systems department IRAD report 1972 volume III	1973
Box 14		
102679693	A survey of sparse matrix technology	1972
102679695	An APL Emulator	1972
102679691	APL - IBM 135 microcode	1972
102679692	APLGOL - a structured programming language for APL	1972
102679696	Effect of aerosols on the transfer of solar energy through realistic model atmospheres. Part I: non-absorbing aerosols	1972
102679694	MPL/135 - a programming language for system/370 model 135 microprogramming	1972
102679698	IBM installation at NOAA	1972-1973
102679720	System 801 principles of operation	1972-1976
102679705	Activities report for 1973	1973
102679701	An analysis of the "return on investment" for the domestic IBM scientific centers	1973
102679703	APLGOL-2 a structured programming system for APL	1973
102679704	Computers in meteorology: Poona, India	1973
102679702	Memos dealing with education announcements, management services, marketing, and weekly reviews	1973
102679697	YAQUI: an arbitrary Lagrangian-Eulerian computer program for fluid flow at all speeds	1973
102679709	Information on data security and cryptography	1973-1974
102679699	Papers on computer languages	1973-1988
102679700	History of IBM Scientific Centers	1973-1992
102679710	A study of Climatological research as it pertains to intelligence problems	1974
102679711	APLGOL a structured programming language for APL	1974
102679712	APLGOL programming language information	1974
102679713	Application development discipline (ADD) functional specifications	1974
102679708	Articles and reports on IBM competitors Amdahl and Hitachi/Fujitsu	1974
102679707	IBM Future System (FS) project	1974
102679714	IBM System/360 and System/270 FORTRAN IV language	1974

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Box 14		
102679715	Kolsky deposition for IBM antitrust case	1974
102679717	Numerical solution of the Vlasov equation with the accurate space derivative method	1974
102679706	System Performance Map	1974
102679716	System Performance Map	1974
102679718	Triannual activities report	1974
102679732	1975 Annual Report	1975
102679729	Abstracts of Houston scientific center reports	1975
102679727	Abstracts of IBM confidential and IBM internal use only Palo Alto scientific center reports	1975
102679728	An empirical study of Apl programs	1975
102679719	Clippings about Amdahl Corporation	1975
102679723	CRAY-1 computer	1975
102679721	Global weather modeling with vector spherical harmonics final report	1975
102635674	High performance packaging systems past and present: an overview	1975
102679731	Memoria 75	1975
102679724	Note on a theory of notation for finite difference calculations	1975
102679726	The APL Assist	1975
102679725	The vectran language: an experimental language for vector/matrix array processing	1975
102679730	Time-difference schemes and transform methods	1975
102679722	Trends and developments in computer/telecommunications technologies	1975
102679734	A fast assembly technique using APL	1976
102679733	IBM systems research institute course listing	1976
Box 15		
102679735	Abstracts of Philadelphia scientific center reports	1976
102679742	A symposium on microprocessors, microcomputers & large scale integration: Perspectives on the wave of the present	1977
102679748	Abstracts of Israel scientific center technical reports	1977
102679743	APLGOL: a structured programming system for VSAPL	1977
102679738	High speed computer application: The use of APL as a problem formulation language, The analysis of a numerical weather model	1977
102679739	History and current status of IBM machines/Asynchronous vector processors	1977
102679741	IBM position statements from the IBM Speakers Bureau	1977
102679750	Large scientific problems vector processing	1977
102679744	Microcoding APL: the system/370 model-135 APL assist	1977
102679740	Optimization guide for programs compiles under IBM Fortran H (OPT = 2)	1977

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Box 15		
102679751	Overview of IBM's data processing support of scientific activities	1977
102679736	Past and future trends in computing	1977
102679745	Stability of difference equations and numerical solutions of differential equations	1977
102679737	The history and current status of IBM machines	1977
102679746	The IBM Israel scientific center	1977
102679749	Tokyo scientific center annual summary report on 1977	1977
102679761	Array theory/370	1978
102679759	Behavioral studies of the programming process	1978
102679752	Climatology study	1978
102679753	Computing at LASL in the 1940s and 1950s	1978
102679758	Contouring methods and applications: Introduction and overview	1978
102679767	Extensive datasets of the diffuse radiation in realistic atmospheric models with aerosols and common absorbing gases	1978
102679756	Fortran compilation of the "18 Livermore kernels", comparing Fortran H extended optimization enhancement	1978
102679760	On the allocation of processes in distributed computing systems	1978
102679555	Papers dealing with the APL language	1978
102679762	Project Descriptions	1978
102679755	Recent developments in the sesame equation-of-state library	1978
102679766	Short-term real-time control of air pollution episodes in Venice	1978
102679764	Stephen W. Dunwell testimony from IBM antitrust case (1978-12-12)	1978
102679765	Stephen W. Dunwell testimony from IBM antitrust case (1978-12-13)	1978
102679763	Stephen W. Dunwell testimony from IBM antitrust case (1978-12-14)	1978
102679754	Surface instabilities under shock-wave loading	1978
102679747	The APL handbook of techniques	1978
102679768	The Fortran H extended optimization enhancement	1978
102679757	Various IBM scientific reports	1978
102679774	Abstracts of Cambridge scientific center reports	1979
102679775	Abstracts of Los Angeles scientific center reports	1979
102679773	An integral equation arising in a convective heat (mass) transfer problem through a boundary layer	1979
102679769	IBM history lectures 1979	1979
102679771	Reviews of the Heidelberg and Paris scientific centers for the scientific center strategy board	1979
102679776	Simulation colorimetry of the earth-atmosphere system	1979
102679777	The design of matrix algorithms for Fortran and virtual storage	1979
102679770	The ENIAC weather prediction computations of 1950-51. The gateway to numerical weather prediction Redone in IBM APL in 1978	1979
102679772	VSAPL Proposal	1979
102679778	AgRISTARS Activities	1980

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Box 16		
102679779	Reports on the European scientific centers	1971-1982
102679784	A real-time air quality monitoring system for the distributed sensor subsystem	1980
102679785	Abstracts of Palo Alto scientific center reports	1980
102679782	Effect of atmospheric conditions on remote sensing of a surface nonhomogeneity	1980
102679783	Transfer of visible radiation in the atmosphere	1980
102679781	Various articles on the atmosphere	1980-1981
102679780	IBM corporate news bulletins 1980-1988	1980-1988
102679791	1980 annual report of the Palo Alto scientific center	1981
102679792	1981 annual report of the Palo Alto scientific center	1981
102679796	Activities of the PASC digital image laboratory	1981
102679794	An experimental digital image manipulation, analysis and processing system (DIMAPS)	1981
102679787	Chinese scientists visit	1981
102679789	Digital Image Processing	1981
102679793	Effect of terrain orientation and solar position on satellite-level luminance observations	1981
102679795	IBM contributions to digital image processing	1981
102679786	Interactive computing and its value to IBM scientists and engineers	1981
102679790	N-dimensional graphics, Part I - lines and hyperplanes	1981
102679788	Papers relating to Paul Friedl, the IBM PC (SCAMP), and Psi-net	1981
102679798	Various articles on digital image processing	1981
102679797	White paper on digital image processing	1981
102679812	1982 annual report of the Los Angeles scientific center	1982
102679816	A class of numerical methods for the computation of Pythagorean sums	1982
102679815	A spherical harmonics solution to the standard problem in radiative transfer	1982
102679802	Articles covering the howling dog theory, a NASA workshop, a Fortran environment, and some computed functions	1982
102679803	Compiler Performance Evaluation	1982
102679817	DIMAPSAR	1982
102679813	DIMAPS-II: DIMAPS for IBM 7350	1982
102679818	Evaluation of remote sensing and digital image processing for geologic and engineering applications	1982
102679819	Evaluation of remote sensing and digital image processing for geologic and engineering applications	1982
102679804	Fortran interactive debug for CMS and TSO guide and reference	1982
102679820	FY 1982 AgRISTARS research report	1982
102679801	IBM 704 Fortran Manuals	1982
102679799	IBM 7350 image processing system	1982
102679821	IBM 7350 image processing system presentation	1982

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Box 16		
102679807	IBM 7350 reports and articles	1982
102679810	IBM Fortran overview, portability and conversion	1982
102679800	IBM PC information	1982
102679814	Importance of higher order components to multispectral classification	1982
102679806	Interactive Geometric correction	1982
102679811	Investigation of large systems effects in MVS	1982
102679808	Report of the panel on large scale computing in science and engineering	1982
102679805	Reservoir Simulation workshop	1982
102679809	VS Fortran application programming: library reference	1982
102679822	Ten Meter Telescope (Keck)	1983

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102679828	1982 Annual Report of the Palo Alto scientific center	1983
102679836	1983 activity report	1983
102679830	Acoustic emission from foreshocks and secular strain changes prior to earthquakes	1983
102679832	AOGC/IBM joint image processing software development project "DIMAPSAR" final report	1983
102679831	DIMAPSAR - an interactive image interpretation system for petroleum minerals exploration	1983
102679829	Evaluation of remote sensing and digital image processing for geologic and engineering applications	1983
102679834	FY 1983 AgRISTARS research report	1983
102679826	IBM Basic language general info	1983
102679825	IBM Personal Computer - programming notes	1983
102679837	IBM scientific centers brochures	1983
102679833	Landsat-4 scientific characterization early results symposium	1983
102679835	Map and Image Processing System	1983
102679840	Palo Alto plan for a vectorizing Fortran compiler	1983
102679823	Ten Meter Telescope (Keck)	1983
102679827	The analogy between NMR and satellite imaging: multispectral analysis and computer graphics	1983
102679824	Various memos and notes on image processing on the Personal Computer	1983
102679839	Vectorized Monte Carlo methods for reactor lattice analysis	1983
102679838	Writing Optimizable Fortran	1983
102679849	1983 annual report of the Palo Alto scientific center	1984
102679848	1984 annual report of the Los Angeles scientific center	1984
102679842	Articles on various computing topics	1984
102679847	Digital Image demo on IBM PC	1984

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Box 17		
102679853	Efficient implementation of the fuzzy C-means clustering algorithm	1984
102679846	Image Texture lectures	1984
102679854	Interactive geometric correction	1984
102679851	Migration of Seismic data	1984
102679852	Multispectral classifications using simulated image data modified with several different procedures	1984
102679850	Reduction of random noise from multiband image data using phase relationships among their fourier coefficients	1984
102679843	Reviews of the Cairo and Kuwait scientific centers for the scientific center strategy board	1984
102679844	Reviews of the Heidelberg and Paris scientific centers for the scientific center strategy board	1984
102679841	Space Telescope (Hubble)	1984
102679855	Testing the DACU as a channel attached PC	1984
102679856	User's guide for the DIMAPSAR registration program	1984
102679845	Various articles on image processing	1984
102679862	Introduction to APL2	1985
102679859	Reviews of the Haifa, Madrid, and Winchester scientific centers for the scientific center strategy board	1985
102679860	Reviews of the Rome and Pisa scientific centers for the scientific center strategy board	1985
102679861	Various articles on digital imaging	1985

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102679866	1984 annual report of the Palo Alto scientific center	1985
102679865	1985 annual report of the Cambridge scientific center	1985
102679871	An improved parallel Jacobi method for diagonalizing a symmetric matrix	1985
102679867	Applications of artificial intelligence II	1985
102679874	Computer engineering at the University of California, Santa Cruz (UCSC)	1985
102679872	Digital image processing emphasizing personal computers	1985
102679875	Engineering and computer science at the University of California, Santa Cruz (UCSC)	1985
102679869	How to write good vectorizable Fortran	1985
102679864	Palo Alto center telephone directory	1985
102679868	Segmentation of thematic mapper image data using fuzzy c-means clustering	1985
102679873	University of California, Santa Cruz (UCSC)-IBM Joint Study	1985
102679876	Virtual attached processors for sci/engr computation	1985
102679870	What you don't know can hurt you or machine organization can affect performance	1985
102679892	A construction kit for interactive graphics applications	1986

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Box 18		
102663150	A new implementation of the Skew-T, Log P diagram and cross-sectional analysis	1986
102679886	ACT-1: a conferencing tool for the IBM PC	1986
102679890	An incidence-matrix-driven panel system for the IBM PC	1986
102679893	Camera and frame grabber product information	1986
102679884	Classification experiments on Landsat-4 multispectral scanner and thematic mapper sensor data	1986
102679882	Computer image processing and display	1986
102679879	Digital image processing class	1986
102679880	IBM 3090 vector facility simulator program description/operations manual	1986
102679878	IBM System/370 vector operations	1986
102679881	Images: technologies, applications, processing and systems	1986
102679887	Interactive image analysis with a VM parallel processing system	1986
102679888	Introduction to vectorizing techniques on the IBM 3090 vector facility	1986
102679891	On matrix bidiagonalization and its application to the compression of large digital images	1986
102679883	On matrix bidiagonalization and its application to the compression of large digital images (dissertation)	1986
102679889	Programming for parallelism	1986
102679885	Technology in the 1990s	1986
102679877	Various reports on computer programming	1986
102679556	Vectorizing Fortran Compilers	1986
102679901	1986 annual report of the Cambridge scientific center	1987
102679902	1986 annual report of the Palo Alto scientific center	1987
102679894	A realistic model of refraction for computer graphics (thesis)	1987
102679899	Exploiting the IBM 3090 vector facility in image processing applications	1987
102679898	Further comments on a model for parallel processing	1987
102679897	Geographic information systems - an introduction	1987
102679905	Image engineering: the technologies and applications of contemporary image processing	1987
102679906	Image Science and Applications	1987
102679903	Knowledge representation networks (KRN): processing knowledge through flow of activation	1987
102679900	Papers on APL2 and Q'Nial	1987
102679896	Texture analysis in digital images	1987
102679904	The partition method for solving tridiagonal equations on multiprocessor computers	1987
102679895	Topics in Super Computing	1987

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Box 19		
102679908	A survey of debugging tools for concurrent programs	1987
102679907	University of California, Santa Cruz (UCSC)-IBM Joint Study quarterly reports	1987
102663190	1987 annual report of the Cambridge scientific center	1988
102663191	1988 annual report of the Los Angeles scientific center	1988
102663182	A comparison of some dialects of parallel Fortran	1988
102663188	A numerically intensive computing environment: IBM 3090 and th PS/2 model 80	1988
102663186	A variable order Runge-Kutta method for initial value problems with rapidly varying right hand sides	1988
102663181	A version of EISPACK for the IBM 3090VF	1988
102663194	Computer Design class	1988
102663192	Descriptions of numerically-intensive computer applications at UCSC	1988
102663193	European networking center annual report 1987	1988
102663179	Image science and application workstation (ISAW 1.7) user's guide	1988
102663180	Interactive computations and display of characteristics of the radiation scattered by a sphere: a demonstration for PS/2 model 80	1988
102663178	Nuclear information handbook and other papers on nuclear policy	1988
102663187	On block householder algorithms	1988
102663183	On the solution of many small systems of linear equations with a vector computer	1988
102663184	Striped I/O for Fortran	1988
102663185	Synchronization and load unbalance effects of an iterative process on large scale multiprocessors	1988
102663189	The electron-phonon interaction and melting of metals	1988
102687701	1989 annual report of the Cambridge scientific center	1989
102687692	European networking center annual report 1988	1989
102687699	European networking center annual report 1989	1989
102687694	FL language manual, parts 1 and 2	1989
102687697	Matrix computations with Fortran and the IBM 3090-VF	1989
102687698	Parallel algorithms for computer graphics	1989
102687693	Program transformation in the presence of errors	1989
102687700	Selected papers on topics in super computing	1989
102636030	To the heart of the matter - The superconducting super collider	1989
102636029	Various articles on running parallel programs and debugging concurrent programs	1989
102687695	Visualization and analysis of molecular structures at an IBM 6090 graphics display station	1989
102687696	Yet another metric of parallel performance	1989
102687710	1989 annual report of the Palo Alto scientific center	1990
102687709	1990 annual report cambridge scientific center	1990
102687704	AIX/360 LAN Performance	1990

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Box 19		
102687707	Distributed visualization design guide series no. 1 performance model reference	1990
102687711	Faculty handbook from the Baskin center for computer engineering and information sciences	1990
102687705	Further applications of the overhead model for parallel systems	1990
102687712	Parallelizing the Fast Fourier Transform	1990
102687708	Super Computer references	1990
102687706	The Global Computer	1990
102687702	The STRETCH Era	1990
102636031	User's guide for the IBM 3117 scanner and personal computer image documentation utility (PC/IDU)	1990
102687703	Various articles on topics in super computing	1990
102687717	1990 annual report of the Palo Alto scientific center	1991
102687718	1991 annual report of the Palo Alto scientific center	1991
102687713	APL2 programming: APL2 for the IBM PC user's guide version 1.02	1991
102687715	Atmospheric gravity waves generated by air flow over mountains	1991
102687714	Domino revisited	1991
102687719	Original REINAS proposal	1991
102687716	Selected papers on topics in super computing	1991
102687720	A history of personal computing (study)	1992
102687722	REINAS Project Review	1992
102687721	University of California, Santa Cruz (UCSC)-IBM Joint Study quarterly reports	1992
102687723	Various articles relating to the REINAS project	1992
102687724	Computer history lecture	1993
Box 20		
102679995	Computer Time Line	1993
102687726	REINAS: real-time environmental information network and analysis system: concept statement	1993
102687727	REINAS: real-time environmental information network and analysis system: Phase II requirements definition	1993
102687725	User's guide for a three-dimensional, primitive equation, numerical ocean model	1993
102687728	Comparative Cosmology (dissertation)	1994
102687730	REINAS: real-time environmental information network and analysis system: Phase III - systems design	1994
102687731	REINAS: real-time environmental information network and analysis system: Phase IV.1-experimentation	1994
102687729	The GFDL modular ocean model	1994
102687734	progress report: networking research in REINAS	1995
102687735	REINAS system installation and internals	1995

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Box 20		
102687736	REINAS Systems software manual	1995
102687732	REINAS tech notes and annual report	1995
102687733	REINAS: real-time environmental information network and analysis system: Phase IV.final - experimentation	1995
102659373	Hiding memory latency via temporal restructuring (dissertation)	1998
Box 21		
102636218	"Rug" problem	
102679486	305 RAMAC manufacturing requirements generation	
102634666	701 calculator form and "Characteristics of the Small Computers"	
102634663	Blank 701 calculator programming forms	
102635561	Calculations	
102634710	Control panel diagrams and check value output	
102663104	Electronic calculating punch	
102663096	P04 - control panel	
102634667	Simulation equations	
102663094	Tables on punched cards available at the Institute for Numerical Analysis, UCLA	1948-10
102634669	10th anniv. of Trinity 1955 printout from Los Alamos Scientific Laboratory open house	1955-07
102634001	Sigma timing chart	1958-11-25
102679296	Occupancy blueprint	1963-12-16
102679994	IBM APL promotional wheel	1971