Guide to the Robert W. Floyd Papers

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Stanford University. Libraries. Department of Special Collections and University Archives
Stanford, California
October 2010
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Note
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Overview

Call Number: SC0625
Creator: Floyd, Robert W.
Title: Robert W. Floyd papers
Dates: 1960-1995

Physical Description: 26 Linear feet

Summary: These papers include his Stanford course files, 1976-94; correspondence, 1968-95, including that with Donald Knuth, 1963-1987; research and subject files; reprints and manuscripts; computer printouts; and note cards. Some materials relate to his interest in backgammon.

Language(s): The materials are in English.

Repository: Department of Special Collections and University Archives
Green Library
557 Escondido Mall
Stanford, CA 94305-6064
Email: specialcollections@stanford.edu
Phone: (650) 725-1022
URL: http://library.stanford.edu/spc


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Cite As
Robert W. Floyd Papers (SC0625). Department of Special Collections and University Archives, Stanford University Libraries, Stanford, Calif.

Biographical/Historical Sketch
Robert W. Floyd joined the Stanford faculty in 1968 as an associate professor of computer science. He was appointed full professor in 1970 and from 1973 to 1975 he was chair of the department. He retired from Stanford in 1994. A child prodigy, Floyd graduated from high school at age 14 and earned his first bachelor’s degree at the age of 17 and his second in physics in 1958, both at the University of Chicago. A self-taught computer operator and programmer, he became a Senior Project Scientist at Computer Associates in Massachusetts in 1962. He taught at the Carnegie Institute of Technology prior to his appointment at Stanford. His most important scientific achievement was pioneering systematic methods of program verification. His research included design and analysis of algorithms for finding the shortest paths in a network, parsing (decomposing) programming languages, calculating quantiles, printing shades of gray on a dot printer, sorting information and selecting random permutations and combinations. In 1978, Floyd won the Association for Computing Machinery Turing Award, the highest honor in computer science. In 1991, the Institute of Electrical and Electronics Engineers (IEEE) Computer Society awarded Floyd its Computer Pioneer Award for his work on early compilers. Floyd was a fellow of the American Academy of Arts and Sciences, the American Association for the Advancement of Science, and the Association for Computing Machinery. He died in September 2001.

Description of the Collection
These papers include his Stanford course files, 1976-94; correspondence, 1968-95, including that with Donald Knuth, 1963-1987; research and subject files; reprints and manuscripts; computer printouts; and note cards. Some materials relate to his interest in backgammon.

Access Terms
Floyd, Robert W.
Knuth, Donald Ervin, 1938-

Stanford University, Computer Science Department.

Backgammon.

Computer programming.

Formal languages.

Machine theory.

Accession ARCH-2002-003 Papers

Box 1
CS class files 1977-92 [needs review for grades, names, etc.]

Box 2
CS class files 1985-94 [needs review for grades, names, etc.]

Box 2
File titled 'Rivest research' includes correspondence with Ronald Rivest 1970s

Box 2
CS class files containing handouts, problems, assignments, etc., 1980s

Box 2
Correspondence with Donald Knuth 1964

Box 3
CS class files containing handouts, problems, assignments, etc., 1980s-1990/91

Box 3
Several files of text on Chiron language 1970s

Box 3
Several files of text for chapters in Language of Machines, 1991

Box 3
File with one miscellaneous letter

Box 3
Subject files containing papers by Floyd and others, research work, lectures, etc.

Box 4
Subject files containing papers by Floyd and others, research work, lectures, etc.

Box 4
Course files

Box 4
Correspondence

Box 5
Subject files

Box 5
Course files

Box 5
Correspondence, including some re his book Language of Machines

Box 5
Floyd's reprints, by title A - CA, including some notes, correspondence, and typescripts

Box 6
Floyd's reprints, by title CL - V, including some notes, correspondence, and typescripts

Box 6
Four folders of loose materials, to be sorted

Box 6
Correspondence files A - E, 1968-1993

Box 7
Correspondence files F - Z, 1968-1993, including separate files for correspondence with Donald Knuth, 1963-69, 1987

Box 7
Correspondence re Floyd's comments on articles by others

Box 7
Subject and class files (handouts, problems, assignments, etc.)

Box 8
Text for book and/or course syllabus, 1989

Box 8
Professional and administrative files, including Journal of the Association for Computing Machinery, National Science Foundation, Guggenheim Fellowship, Computing Reviews

Box 8
File on S.U. curriculum

Box 8
Some correspondence files, mostly re research (includes some Ph.D. students)

Box 8
Loose materials put into folders (correspondence, articles, notes)

Box 8
Research files

Box 8
Class files (handouts, problems, assignments, etc.)

Box 9
Research files

Box 9
Class files (handouts, problems, assignments, etc.)

Box 10
Files on awards

Box 10
Local maps

Box 10
Photos of interior of a house, ca. 1976

Box 10
Biographical files

Box 10
Miscellaneous professional/administrative files

Box 10
Floyd's reader reviews

Box 10
Publishers' files, including W. H. Freeman

Box 10
Typescript of Floyd's "Notes on Programming in PASCAL," 1980

Box 10
"Papers" files containing typescripts, notes, and reprints largely of Floyd's work

Box 10
Subject files

Box 10
Large number of unlabelled files

Box 11
Computer printouts: backgammon, Chiron, and others not labeled
<table>
<thead>
<tr>
<th>Box</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>Unlabelled files (containing mss notes, copies of articles, typescript text, some correspondence, and some class materials)</td>
</tr>
<tr>
<td>12</td>
<td>Loose material newly foldered - largely articles and reprints by others</td>
</tr>
<tr>
<td>13</td>
<td>Class notebooks (now in folders) largely containing computer printouts of material covered, problems, handouts, etc., for CS 106, CS 154, CS 260, and CS 162; and CS 260 as taught by D. Knuth</td>
</tr>
<tr>
<td>13</td>
<td>TeX test runs for &quot;Notes on Programming in PASCAL&quot;</td>
</tr>
<tr>
<td>13</td>
<td>Drafts of writings, 1984-92</td>
</tr>
<tr>
<td>13</td>
<td>Auxiliary material to Pascal MS</td>
</tr>
<tr>
<td>13</td>
<td>Miscellaneous note cards</td>
</tr>
<tr>
<td>13</td>
<td>Tony Lin for RWF - computations</td>
</tr>
<tr>
<td>13</td>
<td>Exposition of sterling numbers - notes</td>
</tr>
<tr>
<td>13</td>
<td>Readings in GKP for CS 260</td>
</tr>
<tr>
<td>13</td>
<td>&quot;Notes on Programming in Pascal,&quot; 1980 - 2 editions plus file of notes and drafts</td>
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<tr>
<td>13</td>
<td>File on algorithms (?)</td>
</tr>
<tr>
<td>13</td>
<td>Drafts of 'Notes on Programming in Pascal'</td>
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<tr>
<td>14</td>
<td>RWF - handouts (2 folders)</td>
</tr>
<tr>
<td>14</td>
<td>Masters (course handouts ?)</td>
</tr>
<tr>
<td>14</td>
<td>CS 162 Winter 1982/83 - problems, answers, handouts, etc.</td>
</tr>
<tr>
<td>14</td>
<td>CS 262 Winter 1985/96 - problems, answers, handouts, etc.</td>
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<tr>
<td>14</td>
<td>CS 162 1984/85 - problems, answers, handouts, etc.</td>
</tr>
<tr>
<td>14</td>
<td>CS 162 Winter 1983-84 - problems, answers, handouts, etc.</td>
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<tr>
<td>14</td>
<td>Floyd - diagrams</td>
</tr>
<tr>
<td>14</td>
<td>CS 358 Aut. 1985/86 - problems, answers, handouts, etc.</td>
</tr>
<tr>
<td>14</td>
<td>R.W. Floyd - biography and misc. correspondence</td>
</tr>
<tr>
<td>14</td>
<td>CS 154 Spring 1981 - problems, answers, handouts, etc.</td>
</tr>
<tr>
<td>14</td>
<td>Notes for Language of Machines</td>
</tr>
<tr>
<td>14</td>
<td>Evaluating RWF 1988-89</td>
</tr>
<tr>
<td>14</td>
<td>Report 1990-91 [contains only a flier on RWF talk]</td>
</tr>
<tr>
<td>14</td>
<td>GKP notes</td>
</tr>
<tr>
<td>14</td>
<td>Files (2) re account monies</td>
</tr>
<tr>
<td>14</td>
<td>Contracts / publishers</td>
</tr>
<tr>
<td>14</td>
<td>Papers in preparation</td>
</tr>
<tr>
<td>14</td>
<td>Indices - Files for 106, 254, 262, 257, BKG</td>
</tr>
<tr>
<td>14</td>
<td>&quot;Program Verification&quot; by Cliff Jones, 1991 - correspondence and text</td>
</tr>
<tr>
<td>14</td>
<td>Travel and phone</td>
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<tr>
<td>14</td>
<td>CS 106H - past students</td>
</tr>
<tr>
<td>14</td>
<td>Math/Comp Science - BS</td>
</tr>
<tr>
<td>14</td>
<td>CS 106H - - problems, answers, handouts, etc.</td>
</tr>
<tr>
<td>14</td>
<td>Assorted &quot;\tex files&quot; containing a mix of graphs and text</td>
</tr>
<tr>
<td>14</td>
<td>Files for Chapters 1 through 9 containing notes</td>
</tr>
<tr>
<td>15</td>
<td>Faculty evaluation reports [student assessments of his courses] 1982-1993 [several folders]</td>
</tr>
<tr>
<td>15</td>
<td>Pages 32-118 of textbook or course reader</td>
</tr>
<tr>
<td>15</td>
<td>Text for CS 106 book?</td>
</tr>
<tr>
<td>15</td>
<td>CS 106H handouts, Aut. 1984/85</td>
</tr>
<tr>
<td>15</td>
<td>CS 154/254 - problems, answers, handouts, etc.</td>
</tr>
<tr>
<td>15</td>
<td>Manuscript notes and writings [1 folder]</td>
</tr>
<tr>
<td>15</td>
<td>CS 106 - problems, answers, handouts, etc.</td>
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<tr>
<td>15</td>
<td>RWF, &quot;Programming and the Chiron Language,&quot; 1971</td>
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<tr>
<td>15</td>
<td>SC106H - Class Note 1, Oct. 7, 1987; Class Note 2, Oct. 16, 1987</td>
</tr>
<tr>
<td>16</td>
<td>Notebook on CS 204, 1976-72 [now in 3 folders]</td>
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<tr>
<td>16</td>
<td>Array.tex (stratified sampling on squares and cubes), 1984</td>
</tr>
<tr>
<td>16</td>
<td>Course evaluations</td>
</tr>
<tr>
<td>16</td>
<td>RWF, &quot;Guide to Chiron&quot;</td>
</tr>
<tr>
<td>16</td>
<td>Furick, Bob - correspondence and related architectural drawings 1994-95 [re software for architectural uses]</td>
</tr>
<tr>
<td>16</td>
<td>CS 105 Spring 1976 taught by Mike Clancy, Jonathan King and Terry Roberts - class materials</td>
</tr>
<tr>
<td>16</td>
<td>SC 262 - manuscript notes, etc, 1988</td>
</tr>
</tbody>
</table>
Box 16  [Manuscript notes – unlabeled]
Box 16  CS 106 – problems, answers, handouts, etc.
Box 16  CS 106 handouts
Box 16  Manuscript notes, unsorted [3 folders]
Box 16  Cartoons
Box 16  Computer printouts
Box 16  Floyd – mail 1989 (mostly email)
Box 16  Miscellaneous correspondence 1994–95

Files containing mostly manuscript notes on:
Box 16  Hashing, coalesced
Box 16  Hashing, linear
Box 16  Hashing, other
Box 16  Conditional expectations
Box 16  Exam questions
Box 16  Factorial moments
Box 16  Normal functions #1
Box 16  Entropy
Box 16  Normal functions #2
Box 16  RB trees
Box 16  Cookie/coalesced/random walks

Box 16  Manuscript notes, unlabeled (probably for class lectures, exams) [2 folders]
Box 16  Evidence: P vs. T for doubles
Box 16  Doubling – Algebraic Theory

Reprints: Articles by Floyd and others
Box 17, Folder 1  A Note on Rational Approximation (Jan 1960)
Box 17, Folder 1  An Algorithm Defining ALGOL Assignment Statements (March 1960)
Box 17, Folder 1  An Algorithm for Coding Efficient Arithmetic Operations (Jan 1961)
Box 17, Folder 1  A Descriptive Language for Symbol Manipulation (Oct 1961)
Box 17, Folder 1  A Note on Mathematical Induction on Phrase Structure Grammars (Dec 1961)
Box 17, Folder 1  Syntactic Analysis and Operator Precedence (July 1963)
Box 17, Folder 1  Bounded Context Syntactic Analysis (Feb 1964)
Box 17, Folder 1  The Syntax of Programming Languages- A Survey (Aug 1964)
Box 17, Folder 1  New Proofs of Old Theorems in Logic and Formal Linguistics (Nov 1966)
Box 17, Folder 1  Non-Deterministic Algorithms (Nov 1966)
Box 17, Folder 1  Nondeterministic Algorithms (Oct 1967)
Box 17, Folder 1  Assigning Meanings to Programs (1967)

Floyd, 1970s
Box 17, Folder 2  Linear Time Bounds for Median Computations (Aug 1971)
Box 17, Folder 2  Bounds on the Expected Time for Median Computations (Jan 1972)
Box 17, Folder 2  An Interpretation-Oriented Theorem Prover over Integers (Aug 1972)
Box 17, Folder 2  Toward Interactive Design of Correct Programs (1972)
Box 17, Folder 2  Time Bounds for Selection and Expected Time Bounds for Selection (April 1973)
Box 17, Folder 2  Time Bounds for Selection (Aug 1973)
Box 17, Folder 2  A Linear Time Two Tape Merge (Dec 1973)
Box 17, Folder 2  The Algorithm SELECT- for Finding the ith Smallest of n Elements [M1] (Sept 1974)
Box 17, Folder 2  The Exact Time Required to Perform Generalized Addition (1975)
Box 17, Folder 2  The Paradigms of Programming (1979)

Floyd, 1980s
Box 17, Folder 3  How Paul Magriel Almost Gave Up Backgammon (Spring 1983)

Floyd, 1990s
Box 17, Folder 4  Addition Machines (1990)
Box 17, Folder 4  Theory of Computation (March 1991)
Box 17, Folder 4  Assigning Meanings to Programs (1993)
Box 17, Folder 4  The Language of Machines- An Introduction to Computability and Formal Languages (1994)
Box 17, Folder 4  Theory of Computation (April 1995)
Box 17, Folder 4  Theory of Computation (small version) (April 1995)

Floyd, undated
Box 17, Folder 5  Can You Take a Double in a Symmetric Position?
Box 17, Folder 5  Notes on Programming Language
Box 17, Folder 5  On Ambiguity in Phrase Structure Languages
Box 17, Folder 5  Permuting Information in Idealized Two-Level Storage
Box 17, Folder 6  The Language of Machines - An Introduction to Computability and Formal Languages
Abel, Gibbons, Josselyn, Musselman and Russell
Box 17, Folder 7  Evaluation of Artificial Intelligence Technology in Surface Technology (U)
Aristides
Box 17, Folder 8  E[15]FHMN- To Rome
Ferguson
Box 17, Folder 9  The Mind's Eye: Nonverbal Thought in Technology
Hopkins, Singer and Strook
Box 17, Folder 10  Current Developments in Mathematics, 1995
Kosaraju
Box 17, Folder 11  Analysis of Structured Programs
Box 17, Folder 11  Context-free Preserving Functions
Box 17, Folder 11  Probabilistic Automata - A Problem of Paz
Leveson and Turner
Box 17, Folder 12  An Investigation of the Therac-25 Accidents
Box 18, Folder 1  Backgammon game - problems
Box 18, Folder 2  Blank worksheets
Box 18, Folder 3  Backgammon correspondence
Box 18, Folder 4  Random walks
Box 18, Folder 5  Specific match positions
Box 18, Folder 6  Lecture + slide
Box 18, Folder 7  Program listings
Box 18, Folder 8  [Backgammon miscellany]
Box 18, Folder 9  Running theory
Box 18, Folder 10  Backgammon problems
Box 18, Folder 11  Notes and drafts on racing
Box 18, Folder 12  The Killer Heuristic
Box 18, Folder 13  Avoiding gammon
Box 18  ACM folio with two certificates
Box 18  Floyd and Richard Beigel, The Language of Machines: an introduction to computability and formal languages
Box 18  Miscellaneous magazines
Box 18  Notecards
Box 18  Set of slides labeled "IFIP 71"