

APPLICATIONS AND EXPERIMENTS

- Laboratory data-taking system
- Algorithm for gear-train problem
- Concordance generator
- Algorithms for traffic-signal control
- Computer-aided linkage analysis
- Automatic dictionary and machine-readable text
- Interactive graphics in data processing
 - An algorithm for generating spline-like curves
- Modeling in three dimensions
- Crystal structure analysis
- Retrieval of geometrically structured information
- Analysis and display of physics data
- Neutron cross-section evaluation
- Cam design on a graphics console
- Implementation and usage

Cole, 2, Sept.-Dec., 240
 ApSimon, 3, 1, 95
 Scharfenberg, 3, 1, 104
 Yardeni, 4, 2, 148
 Bitonti, 4, 3, 200

Galli, 6, 3, 192

Ahuja, 7, 3/4, 206
 Appel, 7, 3/4, 310
 Okaya, 7, 3/4, 322

Jacobsen, 7, 3/4, 331
 McGee, 7, 3/4, 342
 Creasy, 7, 3/4, 355
 Lafuente, 7, 3/4, 365
 Day, 7, 3/4, 373

COMPILERS AND ASSEMBLERS

- Assembly program and language
- FORTRAN compiler
- COBOL compiler
- 1401 FORTRAN compiler
- Macro language design for SYSTEM/360

Talmadge, 2, June, 162
 Lerner, 2, Sept.-Dec., 311
 Dorrance, 2, Sept.-Dec., 322
 Haines, 4, 1, 73
 Freeman, 5, 2, 62

Subject Index 1962-1968

COMPUTER SYSTEMS AND ANALYSIS

- Computer for language interpretation
- SYSTEM/360
 - I Logical structure
 - II Implementations
 - III Processing unit design
 - IV Channel design
 - V Multisystem organization
- Formal description
- Floating-point addition
- Channel interference
- Design characteristics of the 9020 System
- Microprogram control in SYSTEM/360
- Structural aspects of the SYSTEM/360 Model 85
 - I General organization
 - II The cache
 - III Extension to floating-point architecture
- Hierarchical control programs

Meggitt, 3, 1, 68

Blaauw, 3, 2, 119
 Stevens, 3, 2, 136
 Amdahl, 3, 2, 144
 Padegs, 3, 2, 165
 Blaauw, 3, 2, 181
 Falkoff, 3, 2, 198
 Sweeney, 4, 1, 31
 Chang, 4, 2, 162
 Blakeney, 6, 2, 80
 Tucker, 6, 4, 222

Conti, 7, 1, 2
 Liptay, 7, 1, 15
 Padegs, 7, 1, 22
 Keefe, 7, 2, 123

DATA STRUCTURES

- Principles of interactive systems
- A multilevel modeling structure
- Associative data structures for PL/I
- Implementing interactive applications

Johnson, 7, 3/4, 147
 Baskin, 7, 3/4, 218
 Symonds, 7, 3/4, 229
 Chen, 7, 3/4, 257

GRAPHICS IN DATA PROCESSING

- Principles of interactive systems
- Aspects of display technology
- Geometry for construction and display
- An algorithm for generating spline-like curves
- A multilevel modeling structure
- Auxiliary-storage associative data structure for PL/I
- A subroutine package for FORTRAN
- A system for implementing interactive applications

Johnson, 7, 3/4, 147
 Appel, 7, 3/4, 176
 Ahuja, 7, 3/4, 188
 Ahuja, 7, 3/4, 206
 Baskin, 7, 3/4, 218

Symonds, 7, 3/4, 229
 Rully, 7, 3/4, 248

Chen, 7, 3/4, 257

Conversational job control	Brown, 7, 3/4, 271
A conversational display capability	Gagliano, 7, 3/4, 281
A language for three-dimensional geometry	Comba, 7, 3/4, 292
Modeling in three dimensions	Appel, 7, 3/4, 310
Crystal structure analysis	Okaya, 7, 3/4, 322
Retrieval of geometrically structured information	Jacobsen, 7, 3/4, 331
Analysis and display of physics data	McGee, 7, 3/4, 342
Neutron cross-section evaluation	Creasy, 7, 3/4, 355
Cam design on a graphics console	Lafuente, 7, 3/4, 365
Implementation and usage	Day, 7, 3/4, 373

LANGUAGES

Assembly program and language	Talmadge, 2, June, 162
SIMSCRIPT	Dimsdale, 3, 1, 57
Macro language design for SYSTEM/360	Freeman, 5, 2, 62
Graphics subroutine package for FORTRAN	Rully, 7, 3/4, 248
DISPLAYTRAN for conversational graphics	Gagliano, 7, 3/4, 281
A language for three-dimensional geometry	Comba, 7, 3/4, 292

MANAGEMENT INFORMATION SYSTEMS

Economic evaluation of management information systems	Boyd, 2, March, 2
Construction of minimal project networks	Dimsdale, 2, March, 24
Project evaluation and selection	Dimsdale, 2, Sept.-Dec., 200

MANUFACTURING PLANNING AND CONTROL

Requirements generation	Church, 2, Sept.-Dec., 268
Fabrication and assembly operations	
I Control system	Baker, 4, 2, 87
II Long-range planning	Calica, 4, 2, 94
III Matrix methods for configuration data	Loewner, 4, 2, 105
IV Production planning (linear programming)	Dzielinski, 4, 2, 122
V Production order sequencing	Calica, 4, 3, 225
VI Sequencing control	Gorenstein, 4, 3, 241
VII Production planning (adaptive control)	Shapiro, 4, 3, 250
An economic lot-sizing technique	
I The part-period algorithm (PPA)	DeMatteis, 7, 1, 30
II Mathematical analysis of PPA	Mendoza, 7, 1, 39
III A multi-item economic lot-sizing problem	Pierce, 7, 1, 47

MATHEMATICAL METHODS AND PROGRAMS

Trim problem	Gomory, 1, Sept., 77
Construction of minimal project networks	Dimsdale, 2, March, 24
Minimization of transportation costs	Maranzana, 2, June, 129
Statistical classification techniques	Kossack, 2, June, 136
Algorithm for gear-train problem	ApSimon, 3, 1, 95
Interpretive program for matrix arithmetic	Branin, 4, 1, 2
Computer control of digital plotter	Bresenham, 4, 1, 25
Matrix methods for configuration data	Loewner, 4, 2, 105
Discrete dynamic programming algorithms	Held, 4, 2, 136
Computation of e^x with large tables	Spielberg, 5, 2, 102
Statistical analysis of series of events	Lewis, 5, 4, 202
Merge-sort analysis by matrix techniques	Radke, 5, 4, 226
Kernel analysis of elliptical partial differential equations	Hahn, 5, 4, 248
Calculation of critical paths for large networks	Montalbano, 6, 3, 163

MICROPROGRAMMING

- Computer for language interpretation Meggitt, 3, 1, 68
- Microprogram control in SYSTEM/360 Tucker, 6, 4, 222

MULTIPROCESSING SYSTEMS

- Multiprocessing approach to large computer system Baldwin, 1, Sept., 64
- Directly coupled multiprocessing system Smith, 2, Sept.-Dec., 218
- Reliability of polymorphic systems Welch, 4, 1, 43
- Application-oriented multiprocessing system (the 9020)
 - I Introduction Keeley, 6, 2, 78
 - II Design characteristics Blakeney, 6, 2, 80
 - III Control program Devereaux, 6, 2, 95
 - IV Error analysis program Lancto, 6, 2, 103
 - V Diagnostic monitor Suda, 6, 2, 116
 - VI Intended application programs Seward, 6, 2, 124

OPERATING SYSTEMS

- Integrated programming and operating system
 - I System considerations and the monitor Noble, 2, June, 153
 - II Assembly program and language Talmadge, 2, June, 162
 - III Expanded function of the loader Hedberg, 2, Sept.-Dec., 298
 - IV FORTRAN compiler Larner, 2, Sept.-Dec., 311
 - V COBOL compiler Dorrance, 2, Sept.-Dec., 322
 - VI Implementation on the 7040/44 White, 3, 1, 79
- Functional structure of OS/360
 - I Introductory survey Mealy, 5, 1, 3
 - II Job and task management Witt, 5, 1, 12
 - III Data management Clark, 5, 1, 30
- Macro language design for SYSTEM/360 Freeman, 5, 2, 62
- DOS/360 AND TOS/360
 - Function and design Bender, 6, 1, 2
 - Data management concepts Cenfetelli, 6, 1, 22
 - Internal data management for DOS/360 Ricour, 6, 1, 38
- Gemini real-time operating system Mueller, 6, 3, 150
- Avoiding deadlock in multitasking systems Havender, 7, 1, 74
- Statistics gathering and simulation for the Apollo real-time operating system Stanley, 7, 2, 85
- Conversational job control Brown, 7, 3/4, 271

PATTERN RECOGNITION

- Linear decision functions Griffin, 2, Sept.-Dec., 248

PROCESS CONTROL

- Optimal control of nonlinear processes Mugele, 1, Sept., 2
- Laboratory data-taking system Cole, 2, Sept.-Dec., 240
- Hierarchical control programs for systems evaluation Keefe, 7, 2, 123

PROGRAMMING NOTATION AND DOCUMENTATION

- Tables, flow charts, and program logic Montalbano, 1, Sept., 51
- Programming notation in systems design Iverson, 2, June, 117
- Formal description of SYSTEM/360 Falkoff, 3, 2, 198
- Microprogram control in SYSTEM/360 Tucker, 6, 4, 222

QUEUEING

- Technique to control waiting time in a queue Shapiro, 4, 1, 53
- Queueing model for a simple case of time sharing Chang, 5, 2, 115
- Turnaround time for messages of differing priorities Hauth, 7, 2, 103

REAL-TIME SYSTEMS AND ANALYSIS

- Programming considerations for the 7750 Sternad, 2, March, 57
- Recovery for computer switchover Nagler, 2, March, 76
- Dynamic storage allocation for real-time systems Witt, 2, Sept.-Dec., 230
- Laboratory data-taking system Cole, 2, Sept.-Dec., 240
- Testing real-time system programs Ginzberg, 4, 1, 58
- Queuing model for time sharing Chang, 5, 2, 115
- Real-time systems in perspective Aron, 6, 1, 49
- Application-oriented multiprocessing system (the 9020)
- I Introduction Keeley, 6, 2, 78
- II Design characteristics Blakeney, 6, 2, 80
- III Control program Devereaux, 6, 2, 95
- IV Error analysis program Lancto, 6, 2, 103
- V Diagnostic monitor Suda, 6, 2, 116
- VI Intended application programs Seward, 6, 2, 124
- Gemini real-time operating system Mueller, 6, 3, 150
- Statistics gathering and simulation for the Apollo real-time operating system Stanley, 7, 2, 85

SIMULATION

- GPSS—General purpose systems simulator Gordon, 1, Sept., 18
- Systems engineering Smith, 1, Sept., 33
- Generation of input data Yagil, 2, Sept.-Dec., 288
- Systems simulation Blake, 3, 1, 14
- General purpose digital simulator—applications
- I Description of the simulator Efron, 3, 1, 22
- II Telephone intercept system Velasco, 3, 1, 35
- III Urban traffic Blum, 3, 1, 41
- IV Integrated steel mill Boyd, 3, 1, 51
- SIMSCRIPT Dimsdale, 3, 1, 57
- GPSS III—Expanded general purpose simulator Herscovitch, 4, 3, 174
- Role of digital simulation in teleprocessing Seaman, 5, 3, 175
- Two continuous modeling programs Brennan, 6, 4, 242

SORTING AND MERGING

- Merge-sort analysis by matrix technique Radke, 5, 4, 226

STATISTICAL METHODS AND PROGRAMS

- Statistical classification techniques Kossack, 2, June, 136
- Statistical analysis of series of events Lewis, 5, 4, 202

STORAGE ALLOCATION AND ADDRESSING

- File organization and addressing Buchholz, 2, June, 86
- Random addressing Heising, 2, June, 112
- Intrinsically addressed system Griffith, 2, Sept.-Dec., 182
- Dynamic storage allocation for real-time system Witt, 2, Sept.-Dec., 230
- Expanded function of the loader Hedberg, 2, Sept.-Dec., 298
- Storage requirements for data exchange Delgalvis, 3, 1, 2
- Dynamic program relocation McGee, 4, 3, 184
- Replacement algorithms for virtual-storage Belady, 5, 2, 78
- Analysis of auxiliary storage activity Seaman, 5, 3, 158

SYSTEM DESIGN AND EVALUATION

- Economic evaluation of management information systems Boyd, 2, March, 2
- Sequential data processing design Turnburke, 2, March, 37
- Project evaluation and selection Dimsdale, 2, Sept.-Dec., 200
- Merge-sort analysis by matrix techniques Radke, 5, 4, 226
- Kernel analysis of elliptic partial differential equations Hahn, 5, 4, 248
- Evaluation of redundancy in a parallel algorithm Shedler, 6, 3, 142

SYSTEM TECHNIQUES

Tables, flow charts, and program logic	Montalbano, 1, Sept., 51
Modifying 1620 ADD table	Gerson, 1, Sept., 82
Programming for the 7750	Sternad, 2, March, 57
Laboratory data-taking system	Cole, 2, Sept.-Dec., 240
Technique to control waiting-time in a queue	Shapiro, 4, 1, 53
Algorithms for traffic-signal control	Yardeni, 4, 2, 148
Kernel analysis of elliptic partial differential equations	Hahn, 5, 4, 248

TELEPROCESSING

Programming for the 7750	Sternad, 2, March, 57
Teleprocessing system design	
I Characteristic problems	Margopoulos, 5, 3, 134
II Approximating optimal network	Esau, 5, 3, 142
III Analysis of request-queued buffer pool	Bricault, 5, 3, 148
IV Analysis of auxiliary storage activity	Seaman, 5, 3, 158
V Estimating channel interference	Gay, 5, 3, 171
VI Role of digital simulation	Seaman, 5, 3, 175
Conventions for data communication	Eisenbies, 6, 4, 267
Turnaround time for messages of differing priorities	Hauth, 7, 2, 103