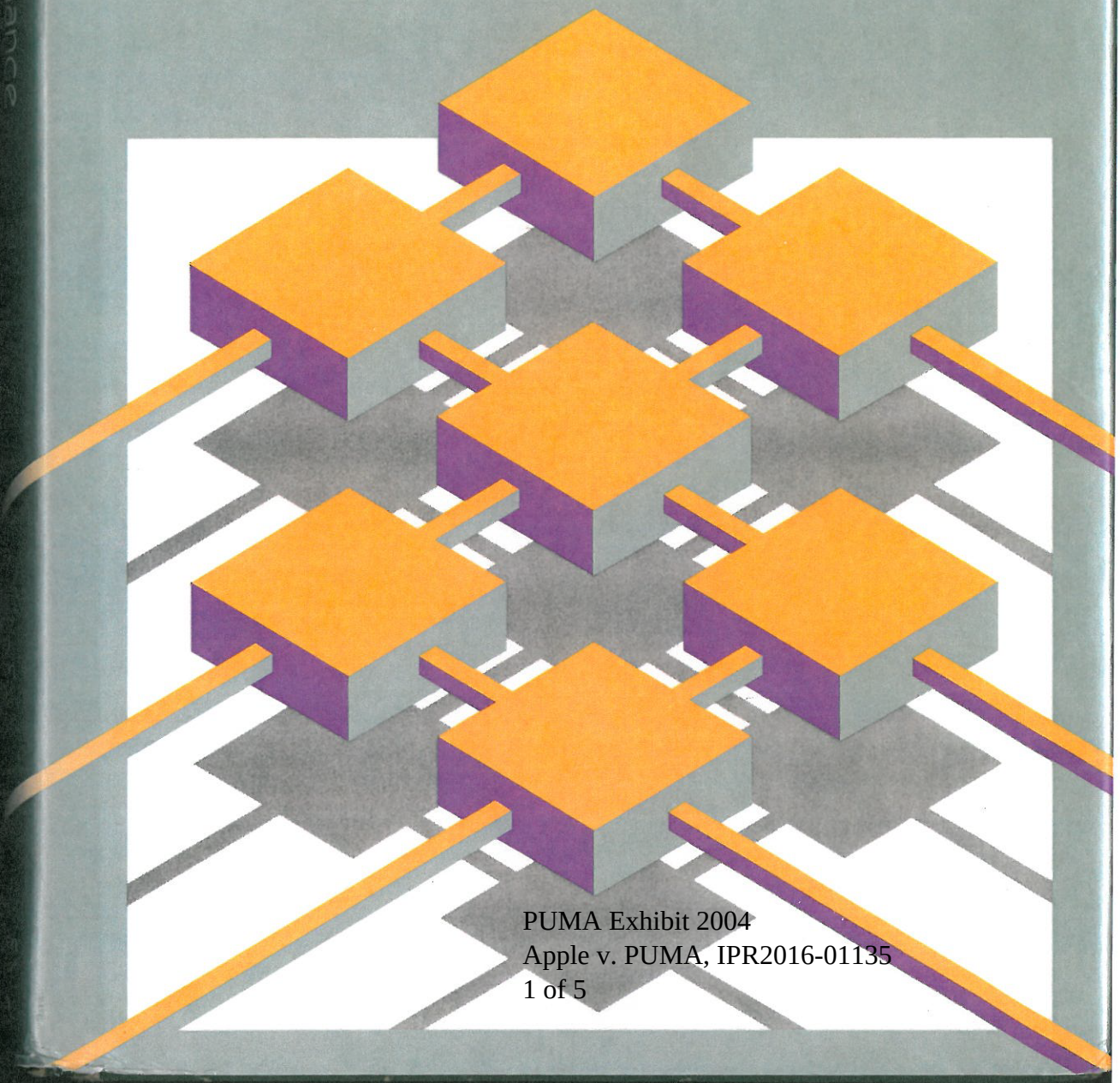
Third Edition

High-Performance Computer Architecture

Harold S. Stone



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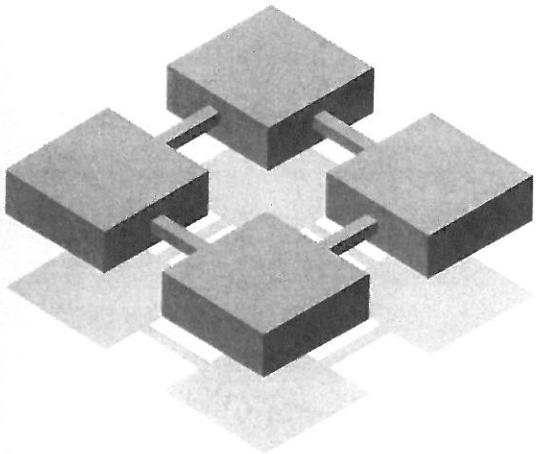

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New York University

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Gigaflops. *See* Gflops
Global memory A memory directly accessible by every processor in a multiprocessor; 359, 418–419, 423–453
See also Shared memory
Golub, G. H., 265
Goodman, J. R., 48, 54, 387, 390, 449
Gottlieb, A., 378, 442, 443
Granularity A measure of the size of an individual task to be executed on a parallel processor; 342–359, 417–420
Gravitation, 240
Greatest common divisor (GCD), 315
Greedy strategy A strategy that initiates a new pipeline operation at the earliest opportunity; 180–182
Green, P. E., Jr., 447
Grohoski, G. F., 221
Grosch's Law An empirical rule that says that the cost of computer systems increases as the square root of the computational power of the systems; 14
Gupta, S. C., 46
Gustafson, J. L., 320, 322

Halstead, R., 421
Hash lookup A search technique in which the search key is transformed to an address at which the search begins; 326
Hayes, J. P., 23
Heidelberger, P., 446, 449
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Hierarchy (of memory system) A multilevel memory structure in which successive levels are progressively larger, slower, and less costly; 25, 28, 100–101, 137
High-speed buffer memory A memory that holds data en route between a large main memory and the registers of a high-speed processor; 318
See also Intermediate memory
Hill, M., 60, 99, 101, 216
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Hit. *See* Cache hit
Hit ratio The ratio of the number of cache hits to the total number of cache accesses; 34, 43, 114
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Hopcroft, J. E., 458
Horowitz, M. 56–57
Hoshino, T., 236, 238, 253, 287, 357, 370, 445, 448
Hot-spot contention An interference phenomenon observed in multiprocessors due to memory access statistics being slightly skewed from a uniform distribution to favor a specific memory module; 376–378, 381–382, 444, 474
HP Spectrum, 214
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Hypercube A parallel processor whose interconnection structure treats individual processors as the nodes of a multidimensional cube and interconnects two processors if the corresponding nodes of the cube are neighbors; 252, 384–385
See also Cosmic Cube

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Image processing A computation performed on a digitized representation of an image whose purpose is to enhance the image or to extract information about the image; 13
Inclusion principle The property that a

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