Purpose:

To support the curriculum and research goals of faculty and students in the Department of Computer Science. The M.S. and Ph.D. degree programs focus on advanced training in the fundamental principles and processes of computation. For the Ph.D. program, six of seven topics are taught (i.e., Algorithms, Computer Architecture, Operating Systems, Parallel and Distributed Computing, Programming Languages, Software Engineering, Theory of Computation). Both degrees also offer an option with concentration in bioinformatics, which includes taking biology and chemistry classes.

Research efforts are concentrated in artificial intelligence and neural nets, computer architecture, database, graphics and visualization, networks, parallel and distributed computing, programming languages, simulation, and software engineering.

General Collection Guidelines:

a. Languages: English is the primary language of the collection.

b. Treatment of Subject: Research and graduate materials are of main focus. Consideration to maintaining a strong undergraduate collection is also encouraged. Biography and general interest material will be selectively purchased. Upper division textbooks will be acquired.

c. Types of Materials: Selection will include monographs and periodicals, encyclopedias, dictionaries, compendia, treatises, proceedings/transactions of conference/congresses/symposia, and data collections. Audio-visual materials as well as CD-ROM products and interactive video will be acquired when needed.

d. Date of Publication: Primarily current imprints will be selected. Some retrospective acquisition of classic or standards works not already in the collection.

e. Types of Materials: Periodicals are of primary importance. Selection will also include monographs, treatises, compendia, and proceedings/transactions of the conferences/congresses/symposia of major societies and associations. Only occasional acquisition of media.

Subject divisions	**Collection Level**
Artificial Intelligence and Neural Networks; Fuzzy logic, neural networks, genetic algorithms, data mining and knowledge discovery, hybrid intelligent systems, distributed intelligent agents, human-computer interaction.	4

Combinatorial Optimization;
Discrete optimization, computational geometry, complexity theory, graph algorithms, applications. 4

Computer Networks;
Network design, performance analysis, survivability, reliability. 4

Parallel and Distributed Computing;
Experimental parallel and distributed computing, parallel algorithms and data structures, network-based computing, parallel discrete event simulation, parallelizing compilers, parallel graph algorithms, interconnection network topology, computational biology. 4

Simulation;
Simulation of artificial neural networks, modeling methodologies, discrete element simulation, distributed control systems, simulation of computer and telecommunication networks, parallel simulation. 4

Graphics and Visualization;
Hypermedia, multimedia, computer-supported cooperative work, user interface design, computer-based training, multimedia training systems, visual representations of concepts and processes in mathematics, applications of fractals in mathematical visualization, visualization methods for data analysis and teaching. 4

Computer Architecture;
VLSI CAD, applications to VLSI manufacturing, computer interconnection networks, parallel logic simulation, layout algorithms, placements and routing. 4

Databases;
Relational databases, object-oriented databases, logic-based databases. 3c

Digital Libraries;
Structure, query, navigation. 3c

Programming Languages;
Language evaluation and implementation, languages for www. 3c

Software Engineering;
Formal specification methods, safety critical software, software reusability, object orientation. 3c

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