# RAKESH NAGI

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### **PROFESSIONAL INTERESTS**

Industrial and Production Systems Engineering, Production-Logistics Management, and Applied Operations Research.

### **PROFESSIONAL COMPETENCIES**

#### **Facilities Planning and Design**

- Wide range of manufacturing and service facilities
- Facility design assessments
- Re-design and re-engineering of existing facilities
- Facility location
- Facility layout
- Flow, Space and Activity Relationships
- Material Handling Systems
- Warehouse Operations

#### **Production Planning and Scheduling**

- Wide range of production and service operations
- Production and Operations Strategy & Assessments
- Cycle-Time Reduction
- Forecasting
- Aggregate Planning
- Inventory Control
- Materials Requirements Planning (MRP, MRP II)
- Operations Scheduling
- Project Management
- Logistics and Supply-Chain Management
- Lean Manufacturing and Just-In-Time Systems

#### Product Design, Process Planning and Group Technology

- Group Technology (Classification and Coding)
- Research topics in Feasibility and Manufacturability
- Concurrent Engineering (Life-cycle engineering)
- Design Standardization

See Industrial Clients on p. 3 See Project Titles on p. 3 Authoring book including industrial cases Optimization Methods Departmental, Cellular, Hybrid; Computer-Aided Layout Aisle Design, Optimal space allocation Selection, Scheduling & Control Bin assignments, S/R Routing, I/R and R/F Data collection

See Industrial Clients on p. 3 See Project Titles on p. 3 Published and developed new industrial techniques; software developed; 4 clients Causal, Time Series and AI methods Doctoral dissertation on Hierarchical production management Reduction, service level improvement, optimal policies. Experience on CINCOM, Manage-2000; BOM, routing and lead-time planning Just-In-Time operations scheduling: industrial applications Multi-criteria, multi-project software developed; Fisher-Price application Research and teaching Training activities to a Consortium of Delphi Auto's 16 suppliers (NYS funded)

- Identification of similar designs
- Variant Design (Praxair application) 1/2 Million project with US Army Parallelizing design to production tasks Reduction of design time and proliferation

### Information Systems

- Object-Oriented Information Technology
- Information Integration in Manufacturing
- Agile Manufacturing Information Systems
- Computer Supported Cooperative Work (work-groups)
- Computer Applications Development

Object-oriented modeling of business and engineering functions (see p. 3)
Computer integrated manufacturing
Enterprise Integration (NSF project)
Distributed DataBase Integration
Collaborative work using IT
Visual Basic, C++, Relational and
Object Oriented DataBases

### EMPLOYMENT

August 1999 - 2001: Director of Graduate Studies, Department of Industrial Engineering, University at Buffalo.

August 1998 - Present: Associate Professor, Department of Industrial Engineering, SUNY at Buffalo, Buffalo. Teaching graduate and undergraduate level courses in production planning and control, facilities design, agile manufacturing, supply-chain management & logistics, and engineering economics. Consulting and conducting research in Industrial and production systems engineering.

August 1993 - 1998: Assistant Professor, Department of Industrial Engineering, SUNY at Buffalo, Buffalo. Similar to above.

December 1991 - August 1993: **Research Associate, Institute for Systems Research, University of Maryland.** Conducted research and guided projects in production management, optimization of lead-times for Manufacturing Resources Planning (MRP) Systems, manufacturability evaluation in concurrent engineering with optimal selection of business partners in agile manufacturing, and plant design.

January 1989 - November 1991: Graduate Research Fellow, Systems Research Center, University of Maryland. Research in production management, scheduling, simulation and performance evaluation.

Summer 1988, 1989, 1990, 1991, 2002: Visiting Faculty (Research), INRIA-Lorraine, Nancy and Metz, France. Research in Group Technology based plant layout, production management, and Supply-Chain Design.

August 1987 - December 1988: Graduate Assistant, Systems Research Center, University of Maryland. Research in clustering algorithms, Data Analysis, Group Technology and Facilities Design.

# EDUCATION

- Doctor of Philosophy in Mechanical Engineering, University of Maryland, College Park, MD, 1991
- Master of Science in Mechanical Engineering, University of Maryland, College Park, MD, 1989
- Bachelor of Engineering in Mechanical Engineering, University of Roorkee, Roorkee, India, 1987

# PUBLICATIONS AND INVITED PRESENTATIONS

Manuscript (1 ongoing), Book Chapters (4), Scientific journal articles (30 accepted, 11 submitted), Conference proceedings and professional meetings (59), Newspaper (2), Invited presentations to Industry/University (17).

### **PROFESSIONAL SOCIETIES**

Senior Member, Institute of Industrial Engineers (IIE). Outstanding Young IE Award of 1999.
Affiliate Member, Society of Manufacturing Engineers (SME). Outstanding Young ME Award, 1999.
Member, American Society of Engineering Education (ASEE).
Associate Member, American Society of Mechanical Engineers (ASME).
Invited Participant, Material Handling Industry (MHI).
American Production and Inventory Control Society (APICS).
Research specialist, The Center for Industrial Effectiveness (TCIE), SUNY at Buffalo.

#### **PROJECTS COMPLETED (partial list)**

#	Sponsor	Project	Dates
1	Ferro Electronics Niagara Falls NV	Operations Analysis and Plant Layout/Facilities Redesign Studies	2/01 - 4/01
2	Carborundum Amberst NY	Knowledge Acquisition and Scheduling System Design	$\frac{2}{01} = \frac{4}{01}$
2. 3	Praxair Tonawanda NY	Decision Analysis for Marketing SOS plants	TBD
3. 4	Applied Res Lab Penn State	Data Fusion Concepts and Novel Algorithms for Condition-	5/99 - 4/00
	University State College PA	Based Maintenance	5/77 1/00
5	Republic Drug Buffalo NY	Operational Analysis and Facility Redesign Studies	5/99 - 7/99
6	Imaging and Sensing Technology	Operational Analysis and Facility Design Studies	10/98 - 12/98
0.	Horseheads NY	operational r maryons and r denity Design Statios	10,70 12,70
7.	Milward Allovs, Lockport, NY	Operational Assessment: Layout and Process Flow	8/98 - 9/-98
8	McKenica Corp Buffalo NY	Time Studies Process Flow and Inventory Control	7/98 - 8/98
9.	A. Lunt Design, Orchard Park	Facility Design and Automation	4/98 - 5/98
10.	National Science Foundation	Facility Layout (Re)Design Approaches	6/98 - 5/01
11.	Graphic Controls, Buffalo, NY	Facility Design Simulation Studies	2/98 - 4/98
12.	Gemcor Inc., West Seneca, NY	Facility Layout: High-bay and Sheet-Metal Areas	8/97 - 9/97
13.	Integral Info. Svs. Amherst. NY	Pinpoint Enhancement Product Development	7/97 - 4/98
14.	National Science Foundation	Agile Manufacturing (Matching Grant)	8/97 - 7/98
15.	AVX Corp., Myrtle Beach, SC	Lavout and Productivity Improvements	6/97
16.	Manitoba Corp., Lancaster, NY	Productivity and Automation Enhancement	12/96 - 1/97
17.	Praxair, Inc., Tonawanda, NY	Cold-box and Component Classification Scheme	6/96 - 8/96
18.	Gemcor Inc., Buffalo, NY	Facility Layout under Cyclical Demand	6/96 - 7/96
19.	National Science Foundation	Agile Manufacturing Information System	7/96 - 6/00
20.	Praxair, Inc., Tonawanda, NY	Assessment of Turbine Assembly Facility Layout	10/95
21.	SUNY at Buffalo, RDF Fund	Multi-Resource Multi-Project Management	11/94 - 9/95
22.	American Axle and Mfg., NY	Tool Room Layout Assessment	8/94
23.	Buffalo weaving & belting, NY	Preliminary Facility Assessment	7/94
24.	Premier Image, Buffalo, NY	Operational Assessment at Premier Image	3/94
25.	Murray Fire Apparatus, NY	Plant Layout at R.D. Murray	1/94
26.	US Army, Warren, MI	Opt. Selection of Partners in Agile Manufacturing	8/93 - 9/95
25.	Westinghouse, Baltimore MD	Optimal Facility Design	8/92 - 7/93
26.	Westinghouse, Baltimore MD	Cycle Time Reduction for Antenna Assembly	8/91 - 7/92
27.	Westinghouse, Baltimore MD	Radio-Communications in Manufacturing Systems	1/91 - 12/91
	Other Equiment & Educational	Projects	
1.	Society of Mfg. Engineers	Development of Mfg. Automation Program	6/97
2.	STEPTools, Inc., Troy, NY	ST-Developer	1/97
3.	Society of Mfg. Engineers	Development of Mfg. Engineering Program	6/95
4.	SUNY at Buffalo	High Performance Parallel Computer	6/94
5.	SUNY at Buffalo	Various Educational Grants	8/93

#### INDUSTRIAL CONSULTANCIES (Selected)

- 1. Praxair, Inc., Tonawanda, NY
- 3. Premier Image, Buffalo, NY
- 5. Kop-Flex, Inc., Baltimore, MD
- 7. American Axle and Manufacturing, Tonawanda NY
- 9. Murray Fire Apparatus, Hamburg, NY
- 11. Bethlehem Steel, Lackawana, NY
- 13. Integral Info. Sys, Amherst, NY
- 15. Lunt Design Inc., Orchard Park, NY
- 17. Milward Alloys, Lockport, NY
- 19. Republic Drug, Buffalo, NY
- 21. Ferro Electronics, Niagara Falls, NY

- 2. Gemcor Inc., Buffalo, NY
- 4. Westinghouse, MSTC and ESD, Baltimore, MD
- 6. AVX, Corp., Myrtle Beach, SC
- 8. Buffalo Weaving and Belting, Buffalo, NY
- 10. Maryland Clothing Co. Baltimore, MD
- 12. Fisher Price, E. Aurora, NY
- 14. Graphic Controls, Buffalo, NY
- 16. McKenica Corp., Buffalo, NY
- 18. Imaging and Sensing Technology, Horseheads, NY
- 20. Carborundum/ St. Gobain, Amherst, NY
- 22. Boeing Co., St. Louis, MO