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BACKGROUND:

EDUCATION:

- PhD " Computer Engineering", Wayne State University, April 1987.
- MS "Computer Engineering", Wayne State University, May 1984.
- Ingenieur d'Etat "Electrical Engineering", Ecole Nationale Polytechnique, Algeria, February 1982.

HONORS:

- Recipient of the 2004 NRL Alan Berman Research Publication Award – Marine GeoSciences Division.
- Recipient of the IEEE Computer Society Certificate of Appreciation for service and dedication as guest editor of the June 1996 special issue of IEEE Micro on public key system.
- Recipient of the 1991 University of New Orleans Early Career Achievement Award for Excellence in Research.
- Recipient of the College of Sciences Faculty Development Award, 1993.
- Recipient of the Research Development Award, Federal Moghul Corporation, 1989.
- Elected Outstanding Teacher by Students and Faculty, Computer Science Department, University of New Orleans, 1990.
- Rated Superior Teacher (based on students' evaluations) by the Dean of Engineering and Science, University of Detroit, 1989.
- Merit Fellowship, Ministry of Higher Education (Algeria), 1981-1986.
- Fellowship, DeVlieg Foundation, Michigan, September 1983-August 1985.

PROFESSIONAL EXPERIENCE:

- Chair, Computer Science Department, July 1998-Present.
- Co-Director of the Ph.D Program in Engineering and Sciences, September 1995-September 1998.
- Professor, Computer Science Department, University of New-Orleans, August 1995-Present.
- Associate Professor, Computer Science Department, University of New-Orleans, September 1989-August 1995.
- Part-Time Instructor, NASA Stennis Space Center - Mississippi.
- Assistant Professor, Electrical Engineering Department, University of Detroit, January 1987-August 1989.
- Research Assistant, Wayne State University , Detroit, January 1986-October 1986.
- Instructional Assistant, Wayne State University, Detroit, September 1985-January 1986.

SYNERGISTIC ACTIVITIES

- Co-Guest editor of a special issue on “Web Services for Geographical Information Systems” for IEEE Internet Computing, September 2006.
- Led a research team that developed VPF+. VPF+ is a superset of NGIA’s (National Geospatial Intelligence Agency) VPF (Vector Product Format) that allows for 3D modeling and 3D topology.
- Designed a web-based sexual predator/offender GIS system for the Florida Department of Law Enforcement (FDLE).
- Designed a crime mapping system for the New Orleans Police Department (NOPD)
- Led a research team that investigated data replication techniques for the DIMHRS (Defense Integrated Military Human Resource System) project.
- Led (in collaboration with NRL’s DMAP) the development of UNO 3D GIS system. UNO 3D GIS uses a VPF+-based data structure (referred to as 3D winged-edge topology). The prototype data consists of Military Operation in Urban Terrain (MOUT) data for Camp LeJeune, N.C. The application is ideal for training and simulation exercises as well as actual field operation requiring on-site assistance in urban areas.

PUBLICATIONS:

Books:

- Sample J., Tu S., Shaw K., Abdelguerfi M., *Geospatial Services and Applications for the Internet Era*, Edited Manuscript, Springer, ISBN # 978-0-387-74673-9, June 2008.
- Chaudhry N., Shaw K., Abdelguerfi M., *Data Stream Management Systems*, Edited Manuscript, Verlag, April 2005.
- Ladner, R., Shaw, K., Abdelguerfi, M., *Mining Spatio-Temporal Information Systems*, edited manuscript, Kluwer Academic Publishers, ISBN # 1-4020-7170-1, August 2002.
- Abdelguerfi, M., *3D Synthetic Environments Reconstruction*, Edited manuscript, Kluwer Academic Press, ISBN 0-7923-7321-9, April 2001.
- Abdelguerfi, M., Wong, K. F., *Parallel Database Techniques*, IEEE Computer Science Press, Edited Manuscript, "Advances" Series, ISBN 0-8186-8398-8, July 1998.
- Abdelguerfi, M., Lavington, S., *Emerging Trends in Database and Knowledge-Base Machines: the application of parallel architectures to smart information systems*, IEEE Computer Science Press, Edited Manuscript, "Advances" Series, 276 pages, ISBN 0-8186-6552-1, January 1995.

Book Chapters:

- Wilson, R., Cobb, M., McCreedy, F., Ladner, R., Olivier, D., Lovitt, T., Shaw, K., Petry, F., Abdelguerfi, M., *Geographical Data Interchange Using XML-Enabled Technology within the GIDB™ System*, invited chapter for inclusion in: *XML Data Management*, Akmal B. Chaudhri, editor, John Wiley & Sons, 2003.

- Chung, M., R. Wilson, R. Ladner, T. Lovitt, M. Cobb, M. Abdelguerfi, K. Shaw, "The Geospatial Information Distribution System (GIDS)", Chapter 17, *Succeeding with Object Databases*, Dr. Akmal B. Chaudhri, editor, John Wiley & Sons, 2001.
- Abdelguerfi, M., Eskicioglu, R., Liebowitz, J., "Knowledge Engineering", in *The Electrical Engineering Handbook* (2nd edition), edited by Richard Dorf, CRC Press, 1997, pp. 2189-32201.
- Abdelguerfi, M., Sood, A.K., "Sorting & Joining Relations with Duplicate Values", in *Database: Theory, Design, and Implementations*, edited by Rische, N., Navathe, S. & Tal, D., IEEE CS Press, 1990, pp.21-36.
- Sood, A.K., Abdelguerfi, M., Shu, S., "Hardware Implementation of Relational Algebra Operation"s, in *Database Machines New Trends and Applications*", edited by A.K. Sood, 1986, Nato ASI Editions, Series F, Springer Verlag, pp.341- 380.

Journal Papers:

- Flanagan, M., Aurélien G., Ratcliff, J., Shaw, K., Sample, J., Abdelguerfi, M., "Hydraulic Splines: A Hybrid Approach to Modeling River Channel Geometries," Sep./Oct. 2007, pp. 4–15.
- Tu. S., Abdelguerfi, M., *Web Services for Geographic Information Systems*, IEEE Internet Computing, September 2006, pp. 13-14.
- Flanagan, M., Grenotton, A., Ratcliff, J., Shaw, K., Sample, J., Abdelguerfi, M., *Hydraulic Splines: A Hybrid Approach to Modeling River Channel Geometries*, IEEE Computing in Sciences and Engineering,
- Ladner, R., Abdelguerfi, M., Shaw, K., "3D Mapping of an Interactive Synthetic Environment", IEEE Computer, March 2000, Vol. 33, No. 3, pp.35-39.
- Abdelguerfi, M., *et al.*, "Representation of 3D Elevation in Terrain Databases Using Hierarchical Triangulated Irregular Networks: A Comparative Analysis", International Journal of Geographical Information Systems, Vol. 12, No. 8, pp. 853-873, 1998.
- Abdelguerfi, M. *et al.*, "An Extended Vector Product Format Suitable for the Representation of Three Dimensional Elevation in Terrain Databases", International Journal of Geographical Information Systems, November 1997, Vol. 11, No. 7, pp. 649-676.
- Abdelguerfi, M., *et al.*, "Public-Key Security Systems", IEEE Micro, Vol. 16, No. 3, June 1996, pp. 10-13.
- Abdelguerfi, M., Sood, A.K., "Computational Complexity of Sorting and Joining Relations with Duplicates", IEEE Transactions on Knowledge and Data Engineering, December 1991, pp.496-503.
- Abdelguerfi, M., Munaf, H., Sood, A.K., "A Fine Grain Parallel Algorithm for Relational Database Aggregation Functions", IEEE Micro, Dec. 1991, pp. 35- 43.
- Abdelguerfi, M., Sood, A. K., "Database Computers: Trends and Opportunitites", Editorial, Special Issue on Database Computers, IEEE Micro, Dec. 1991, pp. 6-7.
- Abdelguerfi, M., Khalaf, S., Sood, A.K., "Bit-Serial Parallel VLSI Processing Unit for the Histogramming Operation", IEEE Transactions on Circuit and Systems, Vol.37, No.7, July 1990, pp.948-954.

- Khalaf, S., Zhu, M., Siy, P., Abdelguerfi, M., "A Real-Time Industrial Pattern Classification System", IEEE Transactions on Industrial Electronics, Vol. 36, No.1, February 1989, pp.84-85.
- Abdelguerfi, M., Sood, A.K., "An External VLSI Algorithm for the Relational Database Projection Operation", International Journal of Electronics, Vol. 66, No.3, 1989, pp.339-347.
- Sood, A.K., Abdelguerfi, M., "Parallel and Pipelined Processing of Some Relational Algebra Operations", International Journal of Electronics, 1985, Vol. 59, No. 4, pp. 477-482.

Conference Papers:

- Finigan, F., Ioup E., Sample J., Shaw K., Abdelguerfi M., "Spatiotemporal Indexing with the M-Tree," URISA 2008 Annual Conference, October, 2008: New Orleans, LA.
- K. Shaw, Sample, J., Ioup, E., M. Abdelguerfi, Tabone, O., "Efficient Approximation of Spatial Network Queries using the M-Tree with Road Network Embedding," 19th International Conference on Scientific and Statistical Database Management(SSDBM 2007), 2007.
- Ioup, E., Shaw, K., Sample, J., Abdelguerfi, M., "Efficient AKNN spatial queries using the M-tree," The 15th ACM International Symposium on Advances in Geographic Information Systems, 2007.
- Fu B., Chen Z., Abdelguerfi M., "An Almost Linear Time 2.8334 Approximation Algorithm for the Disc Covering Problem," The Third International

- Conference on Algorithmic Aspects in Information and Management (AAIM 2007), Portland, Oregon, 317-326.
- Abdelguerfi M., Chen Z., Fu B., “*On the Complexity of Approximation Streaming Algorithms for the k -Center Problem,*” The 2007 International Frontiers of Algorithmics WorkShop (FAW 2007), Lanzhou , China, 160-171.
 - Shaw, K., Sample, J., E. Ioup, Abdelguerfi, M., Tabone, O., “*Efficient Approximation of Spatial Network Queries using the M-Tree with Road Network Embedding,*” 19th International Conference on Scientific and Statistical Database Management(SSDBM 2007), July 2007, Banff, Canada.
 - Shulman, L., Ioup, E., Shaw, K., Sample, J., Abdelguerfi, M., “*Automated Web Service Discovery,*” *International Workshop on Scalable Web Information Integration and Service (in conjunction with [DASFAA 2007](#)), April 2007, Bangkok, Thailand.*
 - Shaw, K., Sample, J., E. Ioup, Abdelguerfi, M., O. Mansion, “*Graph Processing For Spatial Network Queries,*” Proceedings of the 2006 International Conference on Information and Knowledge Engineering, Las Vegas, 2006.
 - Shaw, K., Sample, J., Abdelguerfi, M., Mahadevan, V., “*An R*-tree Based Semi-Dynamic Clustering Method for the Efficient Processing of Spatial Join in a Shared-Nothing Parallel Database System,*” 7th International Meeting High Performance Computing for Computational Science, Brazil, July 2006.
 - Flanagan, M., Grenotton, A., Ratcliff, J., Abdelguerfi, M., Shaw, K., “*Automated Terrain Generation Using LIDAR and Waterbody Survey Data,*” The 20th Annual ACM Symposium on Applied Computing, Santa Fe, New Mexico, March 2005.
 - Abdelguerfi, M, *et al.*, “*A High Performance System for Viewing, Querying, and Retrieval of Geospatial Data Across a Beowulf Cluster,*” Sixth International Meeting on High Performance Computing for Computational Sciences (VECPAR '04), Valencia-Spain, June 2004.
 - Tu S., Flanagan M., Bizot V., Abdelguerfi M., Jay Ratcliff J., Shaw K., “*Integrating Web Services into Map Image Applications,*” The 9th IEEE Symposium on Computers and Communications, June 2004, Alexandria-Egypt.
 - Tu S., Flanagan M., Bizot V., Abdelguerfi M., Mahadevan V., Ratcliff J., Shaw K., “*Design Strategies to Improve Performance of GIS Web Services,*” International Conference on Information Technology, April 2004.
 - Abdelguerfi, M., Givaudan, J., Shaw, K., Ladner, R., “*The 2-3TR-tree, A Trajectory-Oriented Index Structure for Fully Evolving Valid-Time Spatio-Temporal Datasets,*” The 10th ACM International Symposium on Advances in Geographic Information Systems, McLean, VA, November 8-9, 2002.
 - Tu S., Xu L., Abdelguerfi M., and Ratcliff J., “*Achieving Interoperability for Integration of Heterogeneous COTS Geographic Information Systems,*” to appear in Proceedings of the 10th ACM International Symposium on Advances in Geographical Information Systems (ACM GIS 2002), McLean, VA, November 2002.
 - Ladner, R., Abdelguerfi, M., Wilson, R., Shaw, K., “*A Framework for Databasing 3D Synthetic Environment Data,*” 12th International Conference on Database and

expert Systems Applications, DEXA 2001, Munich, Germany, Sep. 2001, pp. 432-441.

- Ladner, R., Abdelguerfi, M., Wilson R., McCreedy F., Breckenridge J., Shaw K., "A Data Structure for 3D Synthetic Environment Reconstruction," Proceedings of the International Conference on Augmented Virtual Environments and 3D Imaging (ICAV3D), Mykonos, Greece, May 2001, pp.287-290.
- Ladner R., Abdelguerfi M., Richard G., III, Klos L., Liu B., Shaw K., "A Distributed Virtual Reality Prototype for Real Time GPS Data," The Second International Symposium on TeleGeoProcessing, Nice, France, May 2000.
- Ladner R., Abdelguerfi M., Shaw K., "A Framework for 3D Synthetic Environment Construction and Rendering," SPIE AEROSENSE 99, Orlando, FL, April 1999, pp. 4-11.
- Ladner R, Shaw K., Abdelguerfi M., "3D Synthetic Environment Representation Using the Non-Manifold 3D Winged-Edge Topology," Lecture Notes in Computer Science, 2nd International Conference on Interoperating Geographic Information Systems, March 1999, Zurich, Switzerland, pp.304-314.
- Shaw K., Abdelguerfi M., et al., "VPF+: A VPF Extension Providing 3D modeling and 3D Topology", Image 1998 Conference, August 1998, pp. KB1-KB8.
- Abdelguerfi M., et al., "Terrain Database Generation," 1998 ASPRS-RTI Conference, "Terrain Database Generation", Tampa, Florida, April 1988, pp.129-138.
- Abdelguerfi M., et al., "A Comparative Analysis of Hierarchical Triangulated Irregular Networks to Represent 3D Elevation in Terrain Databases," SPIE AeroSense '97 - Integrating Photogrammetric Techniques with Scene Analysis and Machine Vision III, April 1997, pp 188-198.
- Abdelguerfi M. et al., "A Terrain Database Representation Using an Extended Vector Product Format (EVPPF)," Fifth International Conference on Information and Knowledge Management of Data", November 1996, Maryland, pp. 27-33.
- Abdelguerfi M., et al., "Towards Virtual World Reconstruction Using the Modeling and Simulation Extended Vector Product (MSEVP),, IASTED International Conference on Modeling, Simulation and Optimization, May 1996, paper 242-091 (8 pages).
- Grant K., Abdelguerfi M., Patterson W., " A Comparative Analysis of Transitive Closure Algorithms for Use in Intelligent Systems," 37th Midwest Symposium on Circuit and Systems, Lafayette, Louisiana, August 1994.
- Khalaf S., El-Gabali M., Abdelguerfi M., "A Parallel Architecture for Co-Occurrence Matrix Computation," 36th Midwest Symposium on Circuit and Systems, Detroit, Michigan, August 1993.
- Abdelguerfi M., Grant K., Murphy E., Patterson W., Stelly, J., "Duplicate Deletion in a Ring- Connected, Shared-Nothing Parallel Database System," 4th International Conference on Database and Expert Systems Applications, Prague, Czechoslovakia, September 1993.
- Abdelguerfi M., Karumanchi, N., Patterson, W., " A High Performance Accelerator for Smart Information System,s" CAMP'93 (Computer Architectures for Machine Perception), New-Orleans, November 1993, pp.323-327.

- Abdelguerfi M., Dunham, A., Patterson W., " *MRA: A Computational Technique for Security in High-Performance Systems*," IFIP's International Congress on Computer Security, Elsevier Science Publishers, May 1993, pp. 381-397.
- Abdelguerfi M., " *Duplicates Detection, Counting and Removal*," Third International Conference on Database and Expert Systems Applications, Valencia, Spain, September 1992, pp.59-64.
- Abdelguerfi M., Hitesh D., " *Design of an Advanced Binary Decision Machine for On/Off Industrial Control*," The 1992 IEEE Industry Application Society Conference, Houston, Texas, October 1992, pp.989-992.
- Abdelguerfi M., Hitesh D., " *A Binary Decision Machine Applied to the Control of a Batching Process*," International Symposium on Mini and Microcomputer Applications, Long Beach, California, December 1991, pp. 20-23.
- Abdelguerfi, M., Dunham, A., Patterson, W., " *Special Purpose VLSI Chips for Multiple-Radix Arithmetic*", Workshop on Signal and Image Processing, British Computer Society Parallel Processing Group, London, November 1991.
- Abdelguerfi, M., Mounaf, H., " *A Bit-Sliced Special Purpose Unit for Relational Database Aggregation Functions*", International Conference on Parallel Processing, Illinois, August 1990, pp.601-602.
- Abdelguerfi, M., Sood, A.K., " *Sorting and Joining Relations with Duplicate Values*", International Conference on Databases, Parallel Architectures, and their Applications, Miami Beach, Florida, March 1990, pp.30-36.
- Khalaf, S., Siy, P., Abdelguerfi, M., " *Three-Dimensional Industrial Object Recognition Using Dempster-Schafer Theory of Evidence*", International Conference on Computing and Information, Ontario, May 1990, pp.30-36.
- Khalaf, S., Siy, P., Abdelguerfi, M., " *2-D and 3-D Touching Part Recognition Using the Theory of Evidence*", 1990 International Symposium on Circuits and Systems, May 1990, pp.992-994.
- Abdelguerfi, M., " *A Special Function Unit for Statistical Aggregation Functions*", *Sixth International Workshop on Database Machines*, Deauville, France, June 1989, pp. 187-201 (Database Machines, Lecture Notes in Computer Science, (edited by H. Boral and P.Faudemay, Springer-Verlag).
- Abdelguerfi, M., Khalaf, S., Sood, A.K., " *Parallel Bit-Level Pipelined VLSI Processing Unit for the Histogramming Operation*", IEEE Computer Conference on Vision and Pattern Recognition, University of Michigan, June 1988, pp.600-607.
- Khalaf, M., Siy, P., Abdelguerfi, M., " *Graph Theoretical Approach to 3-D Object Representation*", 31ST Midwest Symposium on Circuits and Systems, Missouri Rolla, August 1988.
- Abdelguerfi, M., Sood, A.K. , " *A Bus Connected Cellular Array Processing Unit for Relational Database Machines*, in *Database Machines and Knowledge Base Machines*", edited by M. Kitsuregawa, and H. Tanaka, 1988, Kluwer Academic Publishers. Also in, *Proceedings of the 5th International Workshop on Database Machines*, October 1987, Karuizawa, Japan, pp. 243-256.
- Abdelguerfi, M., Khalaf, S., Sood, A.K. , " *Parallel and Pipelined Processing of the Histogramming Operation*", The 2nd Symposium on the Frontiers of Massively Parallel Computation, October 1988, Fairfax, Virginia, pp.451-454.

- Khalaf, S., Zhu, M., Siy, P., Abdelguerfi, M., "*VLSI Architecture for Parametric Classification System*", 30TH Midwest Symposium on Circuits and Systems, Syracuse, August 1987, pp. 417-415.
- Sood, A.K., Abdelguerfi, M., "*Computer-Based Approaches to Tool condition Monitoring*", Proceedings of the Society of Manufacturing Engineering (SME) "SENSOR 85" Conference, Michigan 1985.

Technical Reports:

- Abdelguerfi, M., Richard, Golden, Shengru, Tu, "*Data Replication for the Defense Military Human Resources System (DIMHRS) Project - Phase I*", Space and Naval Warfare Information Technology Center (SPAWARINFOTECHEN), Trade Study Report (21 Pages), November 2000.
- Abdelguerfi, M., Ladner, R., Shaw, K., "*VPF+: A Vector Product Format Extension Suitable for the Three-Dimensional Modeling and Simulation*", NRL Formal Report 7441--98-9683, 1998 (Naval Research Laboratory Technical Report).
- Shaw, K., Abdelguerfi, M., Cooper, E., Wynne, C., Miller, V., Broome, R., Ray, B., "*An Initial Design of Extended Vector Product Format (VPF) for Modeling and Simulation*", NRL Formal Report 7441--96-9651, 1996 (Naval Research Laboratory Technical Report).
- Shaw, K., Abdelguerfi, M., Cooper, E., Wynne, C., Miller, V., Broome, R., Ray, B., "*Towards Virtual Word Reconstruction Using the Modeling and Simulation Extended Vector Product*", NRL Formal Report 7441--96-9654, 1996 (Naval Research Laboratory Technical Report).
- Abdelguerfi, M., Martin, J.J., Schaffer, J.D., "*Feasibility Study for a Louisiana Tourism Information System*", Contract # DCRT-OT-90-09, State of Louisiana, Department of Culture, Recreation and Tourism, Office of Tourism, Computer Science Report No UNO/CS/90, August 1990.
- Abdelguerfi, M., Sood, A.K., "*Computer Based Approaches to Tool Condition Monitoring*", DeVlieg Foundation Research Grant, (Wayne State University Technical Report), CRL Report No. 850221, 1985.

FUNDED GRANTS & CONTRACTS:

Federal Grants/Contracts:

- Abdelguerfi M. (PI), S. Tu, "*METOC GIS Data Integration Research Project*," Space and Naval Warfare Systems Command (SPAWAR) – New Orleans, \$69,939, Start date: 08/2008, duration: 1 year.
- Tu S., Abdelguerfi M., "*METOC Data Asset and Tactical Decision Aid Integration with Navy Service Oriented Architecture Systems*," Space and Naval Warfare Systems Command (SPAWAR) – New Orleans, \$69,939, Start date: 08/2008, duration: 1 year.
- Tu S., Abdelguerfi M., "*Legacy System Renovation Research*," Space and Naval Warfare Systems Command (SPAWAR) – New Orleans, \$80,000, Start date: 08/2008, duration: 1 year.

- Abdelguerfi M. (PI), Richard G., Roussev V., "IA Distance Learning," Space and Naval Warfare Systems Command (SPAWAR) – New Orleans, \$70,000, Start date: 08/2008, duration: 1 year.
- Abdelguerfi M., *"Mining of Spatial Data for Threats to Homeland Security,"* NSA, \$19,238, Start date: 09/2008, Duration: 1 year.
- Abdelguerfi M., *"Mining Large Spatio-Temporal Data Sets over Spatial Networks,"* Naval Research Laboratory, Stennis Space Center, Mississippi, \$307,037, Start date: 08/2007, Duration: 5 years.
- Abdelguerfi M., *"The Navy's Tactical Environmental Data Services (TEDServices)"*, Space and Naval Warfare Systems Command (SPAWAR) - San Diego, \$655,573, Start date: July 2004, Duration: 4 years.
- Abdelguerfi M., *"REU Site In Spatio-Temporal Database Systems"*, NSF, \$270,000, Start Date: April 2004, Duration: 4 years.
- Abdelguerfi, M. (PI), Tu, S. , Venkata M., *"High Performance Hurricane Modeling Using a 72-node Beowulf Cluster"*, U.S Army Corps of Engineers (USACE) of New Orleans, \$30,000, Start Date: June 15, 2004, Duration: 12 months.
- Abdelguerfi M., *"An Architecture for Merging the Navy's Tactical Environmental Data Services (TEDServices) and NATO's Rapid Environmental Assessment Program"*, Naval Research Laboratory (NRL), Stennis Space center, M.S., \$58,968, Start Date: May 2004, Duration: 3 months.
- Dupont R. (PI), Scharf P., Stellingworth R., Abdelguerfi, M., Richard, G., *"Central Gulf Coast Regional Computer Forensics Laboratory Project"*, The Office of Justice Programs, NIJ, Project #16564, Crime Laboratory Improvement Program, U.S. Department of Justice, \$1,449,230, Starting date: October 1, 2002, Duration: 1 year.
- Tu, S. (PI), Abdelguerfi, M., *Enterprise GIS Design and Integration*, U.S. Army Corps of Engineers (USACE)-New Orleans, subcontract through Robotech (Dallas, TX), Inc., \$117,600, Starting date: February 2002, Duration: 14 months.
- Reynolds K.M , Abdelguerfi M. (participant), Wildgen J., Burby R., Micheal Pfeiffer - Commander of Research and Planning, New Orleans Police Department (PI), *"Affordable Crime Mapping and Information Sharing Technology for Community Police Officers"*, The National Institute of Justice, \$203,000, Starting date: June 1997, Duration: 2 years.
- Abdelguerfi, M. (PI), Ming-Cheng, C. (Co-PI), *"Large Scale Systems Development Using the MacroMosaics Concept"*, Department of the Army - Army Research Office (ARO) - Research Triangle Park, NC, \$175,000, Starting date: September 1998, Duration: 2 years.
- Abdelguerfi M (PI), *Development of a Digital Mapping Database with Modeling and Simulation Extensions to be Compared to an Extended VPF Database*, Naval Research Laboratory (NRL), Stennis Space center, M.S., \$69,213, starting date: July 1995, Duration: 16 months.

Industrial R&D Contracts:

- Abdelguerfi, M. (PI), Tu, S., *Experimental Visual Computing for the Mississippi Valley GIS of the U.S. Army Corps of Engineers*, ACS Government Services, Inc., \$24,000, Starting date: October 2002, Duration: six months.
- Tu, S. (PI), Abdelguerfi, M. (PI), *Improved Regression Testing Capabilities for COTS Systems Integration*, Lockheed Martin System Integration - Owego, \$25,000, Start date: May 2003, Duration: 1 year.
- Abdelguerfi, M. (PI), Tu, S., *A Highly-Automated GIS-Based Pest Management Control Program*, APEX Systems, Inc., New Orleans, \$11,250, Starting date: January 2003, Duration: 4.5 months.
- Abdelguerfi, M., *Web-Based Sexual Predator & Offender Geomapping System*, Florida Department of Law Enforcement (FDLE) – subcontract from the University of Central Florida, \$15,500, Starting date: January , 2000, Duration: 6 months
- Shengru, T., Abdelguerfi, M., *Data Visualization and Web Presentation of Hydraulic Model and Maps*, Engima Corporation, \$59,232, Starting date: September 2000, Duration: 6 months.
- Abdelguerfi, M., *Database Design & Fine Tuning*, Solutient, Inc., \$16,240, Starting date: August 2000, Duration: 9 months.
- Abdelguerfi, M., Fouquet, E., *Enhancing the Instructional Computer Facilities at UNO's Computer Science Department*, Equipment Grant from SUN Microsystems, \$52,785, June 2000.
- Hannoura A. & King J. (PIs), Abdelguerfi M. (participant), *The Pontchartrain Lake Unified Management Consortium*, Freeport Mc Moran, \$2,8M, Starting date: September 1996, Duration:4 years.
- Abdelguerfi, M., Shengru, T., Richard, G., *Data Replication for the DIMHRS (Defense Integrated Military Human Resources System)*, Scientific & Engineering Associates (SEA), Inc., \$24,952, Starting date: July 2000, Duration: 3 months.
- Abdelguerfi M. (PI), *Parallel Bit-Level Pipelined Special Function Unit for Statistical Aggregation Functions*, Research Development Award, Federal Moghul Corporation, \$1,900, University of Detroit, 1989, Starting date: May 1990, Duration: 1 year.
- Abdelguerfi M. (Co-PI), *System Component Reliability*, Ford Motor Company, \$237,614, (with N. M. Mohankrisnah, C.J. Sin, A.R. Ashrahzadeh, Project Director: D. Sengupta), University of Detroit, Starting date: May 1988, Duration : 1 year.

Louisiana Board of Regents Grants:

- M. Abdelguerfi, *Building a Competitive Research and Instructional IT Infrastructure in the Greater New Orleans Area*,” BoR – Superior Graduate Fellow Subprogram, \$34,000, Start date: 07/08, Duration: 3 years.
- Abdelguerfi M., *Recruitment of Superior Graduate Students in Computer Science at UNO*,” BoR – Superior Graduate Fellow Subprogram, \$32,000, Start date: 07/07, Duration: 3 years.
- Abdelguerfi, M., *Research & Instruction*, BoR Enhancement 2006, \$100,000, Start date: July 2006, duration: 1 year.

- Abdelguerfi, M., *A Teaching and Research Laboratory for Service-Oriented Computing and GIS Web Services*, BoR Enhancement 2006, \$85,000, Start date: July 2006, duration: 1 year.
- Richard, G., Abdelguerfi, M., *A Laboratory for Applied Computer Forensics Instruction and Research*, BoR Enhancement 2003, \$65,668, Start date: July 2003, Duration: 1 year.
- Tu, S., Abdelguerfi, M., *A Component-Based Software Integration Laboratory*, BoR 2003, Start date: July 2003, Duration: 1 year, \$56,000.
- Abdelguerfi, M., *Graduate Fellowships in Computer Science at UNO*, BoR 2003, \$30,000, Start date: 8/2003, Duration: 3 years.
- Abdelguerfi, M., *Superior Graduate Fellowships in Computer Science at UNO*, Louisiana Board of Regents, \$24,000, Starting date: July 2002, Duration: 3 years.
- Abdelguerfi, M., *A Benchmark Engine for the Maritime Industry*, Funded by Louisiana Board of Regents Industrial Ties Research Subprogram Grant; \$120,000, Start date: July 2002, duration: 4 years.
- Tu, S., Abdelguerfi, M., Golden R., Chiu, M., Korthright, E., *A Multimedia Computing & Computer Visualization Laboratory*, Louisiana Education Quality Support Program, Enhancement Program, \$50,000, Starting Date: June 1, 2000, Duration: 1 year.
- Tu S., Abdelguerfi, M., Golden R., Chiu, M., Korthright, E., *A Multimedia Computing & Computer Visualization Laboratory*, Louisiana Education Quality Support Program, Enhancement Program, \$50,000, Starting Date: June 1, 2000, Duration: 1 year.
- Richard, G. (PI), Abdelguerfi, M., Chiu, M., *Wireless Computer Experimentation Laboratory*, Louisiana Education Quality Support Program, Enhancement Program, \$78,000, Starting Date: June 1, 2000, Duration: 1 year.
- Abdelguerfi M. (participant) Inozu B. (PI), *"RAM/SHIPNET Roll-Out - Phase I"*, Gulf Coast Region Maritime Technology Center, \$300,000, Starting Date: April 1, 1997, Duration: 1 year.
- Abdelguerfi, M. (PI), Tu, S., Johannes M, Richard G., Echols M. (Co-PIs), *"A High-Performance Computing Environment for Concurrency Research and Development in the Computer Science Department"*, Louisiana Education Quality Support Program, Enhancement Program, \$92,000 (An additional \$19,131 matching funds have been granted by the University of New Orleans Research Office), Starting date: June 1997, Duration: 2 year
- Abdelguerfi, M., *"Louisiana Balloon-Borne Experiment Cluster: Phase II"*, NASA/EPSCOR, Subcontract from LSU, \$204,737, Starting date: June 1997, Duration: 5 years.
- Abdelguerfi, M., *High-Level Support for Recursive Primitives in a Shared-Nothing Parallel Deductive Database System*, Louisiana Education Quality Support Program, Research Program, \$56,080 (Plus \$8,500 matching funds from the University of New Orleans' Research Office), starting date: June 1993, duration: 4 years.
- Abdelguerfi, M. (PI), Patterson W. (other PI), *Strong Protection Against Computer Virus Attacks*, Louisiana Education Quality Support Program, PleX Research Program, \$160,000, starting date: June 1993, duration: 4 years.

- Abdelguerfi, M., *"Enhancing Microelectronics Education in the State of Louisiana"* National Science Foundation/Louisiana Stimulus for Excellence in Research, \$65,200, Starting date: February 1993, Duration: 2.5 years
- Abdelguerfi, M., *A Multidisciplinary Computer-Aided VLSI Laboratory: Enhancement and Upgrade*, Louisiana Education Quality Support Program, Enhancement Program, \$50,000 (An additional \$22,280 matching funds have been granted by the University of New Orleans Research Office), Starting date: June 1992, Duration: 1 year.
- Abdelguerfi, M. (Co-PI), Patterson W. (PI), *Strengthening the LCCSE Intelligent Machines Research Cluster*", Louisiana Stimulus for Excellence in Research/National Science Foundation Program, \$69,000, Starting date: July 1991, Duration: 2 years.
- Abdelguerfi, M., *Effect of Duplicates on the Operators of the Relational, NF2, and Extended NF2 Data Models*, University of New Orleans Research Council, \$5,000, May 1990 -1991.
- Abdelguerfi, M., *Design of a Hypercube-Based Pictorial Database Machine*, Louisiana Stimulus for Excellence in Research/National Science Foundation General Enhancement Grant, \$7,000, University of New Orleans, Starting date: May 1990, Duration 1 year.

University of New Orleans Internal Grants (samples):

- Abdelguerfi, M., *Managing Enrollment Growth in the Computer Science Department*, Strategic Technology Planning and Implementation Group (STPIG), UNO, \$32,800, Starting date: July 1, 2000, Duration: one year.
- Abdelguerfi, M., *Upgrade Literacy lab/Help Desk*, Strategic Technology Planning and Implementation Group (STPIG), UNO, \$80,000, Starting date: July 1, 2001, Duration: one year.

MS STUDENTS (including advisee's last known affiliation):

1. Philip Brunetti, TBD, (expected December 2010).
2. Sandeep Medikonda, TBD, (expected May 2010).
3. David Mark, "Bitmap Indexing of Very Large netCDF files," (expected May 2009).
4. Eric Normand, "A Semi-Supervised Information Extraction Framework for Large Redundant Corpora," December 2008, (Research Scientist at the Naval Research Laboratory- Stennis Space Center).
5. John Finigan, "Spatiotemporal Indexing with the M-Tree," July 2008, (Vaultlogix as Manager of Software Development, Vaultlogix Inc., New Orleans, LA).
6. Doc Lap Nguyen, Personal Data Warehousing Via a Bluetooth Enabled Cell Phone, May 2007, (System Analyst, LSU Health Science, New Orleans, LA)
7. Lev Shulman, Automatic GIS Web Discovery, May 2007, (Project Manager, Solutient, Inc., New Orleans, LA)
8. Elias Ioup, Improving Performance of Spatial Network Queries, August 2006, (Research Scientist at the Naval Research Laboratory- Stennis Space Center— also PhD student at UNO)

9. Fady Qaddoura, Bi-Directional Information Exchange With Handheld Computing Devices, December 2006, (System Administrator, University of Houston Medical Center, Houston, TX).
10. Gayatri Ganpaa, An R*-tree Based Semi-Dynamic Clustering Method for the Efficient Processing of Spatial Join in a Shared-Nothing Parallel Database System, January 2006, (Hartford, Inc., Connecticut).
11. George Voulgaris, An Instructional SOAP Based Information, December 2004, (IT Department, VA, New Orleans)
12. Fareed Qaddoura, Benchmarking Engine for the Maritime December 2004, (IT Director, University of New Orleans, Computer Science Department).
13. Muhammad Mas-U-dur Rahman, A Cost-Effective Method for Providing Data to Mobile Users, July 2003.
14. Givaudan, J., The 2-3TR-tree, A Trajectory-Oriented Index Structure for Fully Evolving Valid-Time Spatio-Temporal Datasets”, May 2002, (Project Manager Total-Fina, France).
15. Olivier, David, Spatial BLOBS: The incorporation of Large volume Meteorological Data Into an Object Oriented Geospatial Database, December 2001, (Research Scientist, Naval Research Laboratory – Stennis Space center, MS).
16. Mahadevan, V., Benchmarking Data Replication Performance for the Defense Integrated Military Human Resource System (DIMRHS), May 2001, (System Manager, UNO, Computer Science Department).
17. Farhad Khoubehi, Design and Development of a Case Management Database for The New Orleans Police Department, December 2000.
18. Haider Mohammed Sharif, Development of a Public Access Information System for Tracking Predators & Offenders in the state of Florida, May 2000, (Entergy / SAIC, New Orleans, Louisiana).
19. Udaykiran Katikaneni, Fine Tuning and Web-Enabling SPIN (Ship's Performance Indicator), December 1999, (Motorola, Chicago).
20. Elizabeth Warner, Design and Implementation of a Web Site System to Query a GIS Database Via Interactive Maps, December 1999, (Naval Meteorology and Oceanography Command, Stennis Space Center, MS).
21. Shiyin Liu, Towards the Design of a Case Management System for the New Orleans Police Department, May 1999.
22. Sanjoy Chakraborty, Towards the Design of an Internet-Based 3D GIS Using VPF+, May 1999.
23. Roy Ladner, MS Thesis, "A Non-Manifold Winged-Edge Topology for 3D Modeling", December 1997, (currently Director, Data Architecture and Administration Division Naval Meteorology and Oceanography Command, Stennis Space Center, MS).
24. Martin Arnaud, Design and Development of an International Maritime Database, December 1997, (ENTERGY Corp., New Orleans, Louisiana).
25. Sathyamoorthi S., A Bottom-up Terrain Triangulation Algorithm, December 1997. (ENTERGY Corp., New Orleans, Louisiana).

26. Srikhant Sr, MS Thesis, "An Environmental Database for the Pontchartrain and Pearl River Basins, funded by a contract from Freeport Mc Moran, May 1998, (ENTERGY Corp., New Orleans, Louisiana).
27. Edgar Cooper, MS Thesis, "An Extended Vector Product Format", May 1996, (ENTERGY Corp., New Orleans, Louisiana).
28. Christ Wynne, MS Thesis, "A Hierarchical Vector Product Format", August 1996, (ENTERGY Corp., New Orleans, Louisiana).
29. Herbert S. Whorter, M.S. Thesis, "A CMOS RSA Processor for Smart Cards", May 1996, (American Management Systems (AMS), Boulder, Colorado)..
30. Addanki Srinivas, M.S. Thesis, " An RSA Processor Based on Multiple Radix Arithmetic", May 1996, (INTEL, Portland - Oregon).
31. Eccher Renato, M.S. Thesis, "Distributed Transaction Management in an Object Oriented Environment", May 1995, (DATUS, Boulder, Colorado).
32. Kavitha Koppolu, M.S. Thesis, "Experimentation with a Shared-Nothing Parallel Database Engine", December 1994, (AT&T, Ohio).
33. Grant, K., M.S. Thesis, "Implementation of Recursive Queries on a Shared-Nothing Parallel Database Computer", December 1994, (recipient of a PhD Fellowship at LSU).
34. Nirmala Karumanchi, M.S. Thesis, "A High Performance Accelerator for Smart Information Systems", Spring 1994, (Advanced Micro Devices (AMD), Austin, Texas).
35. Hung Weiming, M.S. Thesis, "A Survey and Taxonomy of Special Purpose Processors for RSA", Summer 1993, (Mitsubishi, Taiwan).
36. Dalal Hittesh, M..S. Thesis, University of Detroit, 1990, "Design of an Advanced Binary Decision Machine", (Chips and Technology, San Jose, California).

Ph.D STUDENTS (including advisee's last known affiliation):

- Elias Ioup (B.S in Computer Science with Honors-University of Chicago, MS in Computer Science – University of New Orleans), Spatial Web Services Orchestration (expected December 2009).
- Maik Flanagan (BS & M.S in Computer Science - MIT), "*The Hydraulic Spine: Comparison of Existing Surface Modeling Techniques and Development of a Spline-Based Approach for Hydraulic and Topographic Surface Modeling,*" December 2007, Lockheed Martin Inc., New Orleans.
- Roy Ladner, "*Synthetic Environment Generation for Modeling and Simulation,*" May 2000 (currently Director, Data Architecture and Administration Division, Naval Meteorology and Oceanography Command, NASA Stennis Space Center, MS).