

## **AMR A. OLOUFA, Ph. D., P. E .**

Professor & Director of Construction Programs

University of Central Florida

P.O. Box 162450, Orlando, FL 32816-2450

Phone: (407) 823-3592, FAX: (407) 823-3315, E-mail: aoloufa@mail.ucf.edu

### **EDUCATION**

- Ph.D. in Civil Engineering, University of California, Berkeley.
- M.S. in Civil Engineering, Columbia University, New York.
- B.S. in Civil Engineering, Cairo University, Egypt.

### **TEACHING**

#### **University of Central Florida**

CCE 4003: Introduction to Construction Engineering  
CCE 4004: Construction Methods  
CCE 4034: Construction Estimating and Scheduling  
CCE 4402: Construction Equipment and Productivity  
CCE 4810: Construction Engineering Design  
EGN 1006: Introduction to Engineering Profession

#### **Penn State University**

AE 597C: Computer Tools for Project Management  
AE 597G: Computer Graphics In Engineering Applications  
AE 475: Building Construction I  
AE 476: Building Construction II  
AE 372: Introduction to Building Construction

#### **University of Hawaii**

CE 601 : Computer Graphics In Engineering  
CE 602 : Project Scheduling and Reporting  
CE 674 : Advanced Construction Estimating  
CE 472 : Construction Management  
CE 491 : Computer Scheduling of Construction Operations  
CE 270 : Applied Mechanics I  
CE 113 : Introduction To Computers and Design



5. Oloufa, A. A. and K.C. Crandall. 1992. *Feedback Mechanisms For Operational Simulation*. ASCE Journal of Computing. April. pp 161-177.
6. Oloufa, A. A.. 1993. *Modeling Operational Activities In Object Oriented Simulation*. ASCE Journal of Computing. January. Vol. 7, No. 1: pp 94 - 106.
7. Oloufa, A. A.. 1993. *Modeling and Simulation of Construction Operations*. Journal of Automation In Construction. March. Vol. 1 No.4: pp 351 - 359.
8. Oloufa, A. 1994. *Construction Simulation of Buildings with a User-Oriented Approach*. Microcomputers in Civil Engineering. #9.: pp 425-433.
9. Oloufa, A. A., A. Eltahan and C.S. Papacostas. 1994. *An Integrated GIS for Construction Site Investigation*. ASCE Journal of Construction Engineering and Management, March. Vol. 120:1. pp 211-222.
10. El-Kadi, A., Oloufa, A., Eltahan, A. and Malik, H. 1994. *Use of a Geographic Information System In Site-Specific Groundwater Modeling*. Ground Water Journal, July. Vol. 32. No. 4. pp 617-625.
11. Oloufa, A., and M. Ikeda. 1995. *An Automated Environment for Soils-Dependent Applications*. Journal of Automation in Construction. Vol. 4 #2, June. pp. 139-146.
12. Carpenter, C. and A. Oloufa. 1995. *Post Occupancy Evaluation of Buildings and Development of Facility Performance Criteria*. ASCE Journal of Arch. Eng. Vol. 1 No. 2. pp 77-81.
13. Oloufa, A., A. El-Kadi, A. Eltahan, and H. Malik. 1995. *An Analytical Groundwater Modeling Approach for Natural Resources Utilizing GIS*. Civil Engineering Systems. Vol. 12. pp 49-65.
14. Thomas, H. R. and A. A. Oloufa. 1995. *Labor Productivity, Disruptions, and the Ripple Effect*. Cost Engineering, No. 81-94.. Dec. 1995.
15. Li, C., Oloufa, A. and Thomas, H. R. 1996. *A GIS-based System for Pavement Compaction*. Journal of Automation in Construction. Vol. 5. pp. 51-59. (Invited Paper) May 1996.
16. Thomas, H. R., Oloufa, A. A., and Hanna, A.. 1996. *A What to do Guide for Schedule Acceleration and Compression*. National Electrical Contractors Association NECA 1996. (Publication) 40 pages
17. Korka, J., A. Oloufa and H. Thomas. Sept. 1997. *Requirements for Computerized Maintenance Management Systems for Buildings*. ASCE Journal of Architectural Engineering. Vol. 3:3, pp. 118-124.
18. Oloufa A. A., Masaaki Ikeda, and Tang-Hung Nguyen, *Resource-Based Simulation Libraries for Construction*, Journal of Automation in Construction, 1998, U.S.A
19. Do, W. S., A. Oloufa and H. Thomas. 1999. *Evaluation of GPS devices for a Quality Control System for Compaction Operations*. Transportation Research Record # 1675 pp. 67-74.
20. Nguyen, H. & A. A. Oloufa: *Topology Applications for Design and Construction of Buildings*. ASCE Journal of Computing in Civil Engineering. October 2001, Vol. 15, No. 4, pages 268-274.
21. Nguyen, H. & A. A. Oloufa: *Spatial Information: Classification and Applications*. Computer-Aided Civil and Infrastructure Engineering. 2002, Vol. 17, pages 246-255.

22. Oloufa, A. A. "A *GPS-based System Architecture for the Quality Control of Asphalt Compaction*". IEEE Robotics and Automation Magazine. March 2002. Vol. 9, No.1, pages 29-35.
23. Oloufa, A. A., Ikeda, M., and Oda, H.: *Situational Awareness of Equipment using GPS, wireless, and web technologies*. Automation in Construction 12 (2003). Pages 737-748.
24. Oloufa, A., Hosni, Y., Fayez, M., and Axelsson, P.: *Using DSM for Modeling Information Flow in Construction Design Projects*. Civil Engineering & Environmental Systems. Volume 21, Number 2, June 2004. Pages: 105 - 125 .
25. Oloufa, A., Mahgoub, H. and Ali, H.: *Infrared Thermography for Asphalt Crack Imaging & Automated Detection*. Transportation Research Record. 2004. Pages: 126-133.
26. Serag, E., Oloufa, A., and Linda Malone: *Reconciliation of Owner & Contractor Views In Heavy Construction*. Journal of Professional Issues in Engineering Education and Practice: Legal Section, ASCE - January 2008.
27. Serag, E., Oloufa, A. , and Essam Radwan: *Labor Productivity Trends in a Changed Environment*. Journal of Construction Engineering & Management, ASCE (under review)
28. Serag, E., Oloufa, A. , Malone, L. and Essam Radwan: *Quantification of Change Orders Using Verifiable Site Data*. Journal of Construction Engineering and Management, ASCE.
29. Serag, E., Oloufa, A. , and Essam Radwan: *Productivity Loss Trends In Utility Construction*. Journal of Construction Engineering and Management, ASCE. Accepted for publication. 2008.
30. Bowie, J., Moslehy, F. A., and Oloufa, A, *Development of a Low-Cost Weigh-in-Motion System*, Journal of Management & Engineering Integration (JMEI), Vol. 1, 2008.
31. Serag, E, Oloufa, A., Malone, L. and Radwan, E., *A Model for Quantifying the Impact of Change Orders on Project Cost for US Roadwork Construction*, Journal of Construction Engineering and Management, ASCE. September 2010.
32. Persaud, V., Oloufa, A. A., and Abdel Aty, M. M., *Dynamic Speed Monitoring on Sharp Curves Utilizing a Wireless Solar Powered Dynamic Speed Monitoring System*. ITE Journal, Institute of Transportation Engineers, March 2012.

### **Refereed Proceedings**

1. Oloufa, A. A.: "*A Framework for the Operational Simulation of Construction Projects*", Technical Report #13, University of California in Berkeley, Mar. 1988.
2. Oloufa, A. A., Papacostas C. S. and Espino, R.: "*GIS Applications in Geotechnical Engineering*", Proceedings of the 8th National Conference on Microcomputers in Civil Engineering, Oct. 1990, Orlando, FL.
3. Oloufa, A. A.: "*Intuitive Simulation Modeling Using Object Oriented Constructs*". Proceedings of the 8th International Symposium on Automation and Robotics In Construction (ISARC), Stuttgart, Germany, June 1991.
4. Oloufa, A. A. and Eltahan, A. : "*A GIS For Geotechnical Data Management*". Proceedings of the CIB World Building Congress, Montreal 1992.

5. Oloufa, A. A.: "*Visual Simulation Programming For Construction Operations*". Proceedings of the 9th International Symposium on Automation and Robotics In Construction (ISARC), Tokyo, Japan, June 1992.
6. Oloufa, A. A., Riggs, H. R. and Hamada, H. S.: "*CE 113: A Freshman Course In The Integration of Computers and Design*", Proceedings of the ASEE-PSU, Oct. 1992, Los Angeles, CA.
7. Oloufa, A. A. and C. Carpenter. 1994. *A Framework for Post Occupancy Evaluation of Buildings*. 10<sup>th</sup> International Symp. of Cybernetics. Baden Baden, Germany. Invited paper
8. Smith, G., A. Oloufa, and J. Kranz: March 1999. "*Electrical Contractor Safety Management Evaluation*". 2<sup>nd</sup> International Conference on Implementation of Safety and Health on Construction Sites, Hawaii.
9. Oloufa, A.: January 2001. "*Real-Time Tracking for Compaction of Superpave Mixes. First International Structural Engineering & Construction Conference*". Honolulu, HI.
10. Fayez, M., Axelsson, P., Oloufa, A., and Hosni, Y., "DSM Versus CPM: Issues for Planning Design & Construction Activities", *ASCE Construction Congress*, Honolulu, HI, March 10-14 2003.
11. Mohamed Fayez, Pär Axelsson, Amr Oloufa, and Yasser Hosni. *Information Intensive Projects: Planning and optimizing using the Design Structure Matrix (DSM)*. IERC2003, IIE Annual Research Conference, May 2003, Portland, Oregon, May 18 - 20, 2003.
12. Moslehy, F.A. and Oloufa, A. "*Laser-Based Vibration Technique for Weight Measurement of Commercial Vehicles*," Proc. of the IMAC XXII Conference on Structural Dynamics, Dearborn, MI, paper #142, January 2004.
13. Tarek A. Monem, Amr A. Oloufa, and Hesham Mahgoub . Asphalt Crack Detection Using Thermography. *Inframation*. October 2005. Las Vegas, NV. 14 pages.
14. Moslehy, F.A., Oloufa, A. and Abdel-Gawad, S., "*An Innovative Mobile Weigh-in-Motion System for Heavy Vehicles*," Proc. of the 12<sup>th</sup> Annual IEMS Conference, Cocoa Beach, FL, March 2006.
15. Moslehy, F.A., Oloufa, A. and Bowie, J., "*An Elegant Design of Weigh-in-Motion Test Apparatus*," Proc. of the 13<sup>th</sup> Annual IEMS Conference, Cocoa Beach, FL, March 2007.
16. Serag, E., and Oloufa, A. A Model of Productivity Loss Using Multiple Regression. Presented and Published in Construction Research Council Conference, May 6-8th 2007.
17. Serag, E., and Oloufa, A. Change Order Impact on Project Cost. Presented and published in American Society for Engineering Education Conference, June 23-27th 2007.
18. Mahgoub, H., Oloufa, A., and Spahi, S.: *Commercial Vehicles Remotely Operated Compliance Stations (ROCS<sup>TM</sup>) in Florida*. Transportation Research Board meeting. Washington D.C., January 2008.
19. Persaud, Vasu, Oloufa, A. and Abdel-Aty, M.: *Dynamic Speed Monitoring on Sharp Curves utilizing Green Technologies*, Transportation Research Board, October 2009.
20. Huang, H., Abdel-Aty, M., Al-Ahad, E., Oloufa, A., Chen, Y, and Morrow, R.: *Fog- and Smoke-Related Crashes in Florida: Identifying Crash Characteristics, Spatial Distribution, and Injury Severity*, Transportation Research Board, October 2009.

21. Hassan H., Abdel-Aty M. and Oloufa A. (2011) The Effect of Warning Messages And Variable Speeds In Different Visibility Conditions, Preprint No. TRB 11-0354, 89th Annual Meeting of the Transportation Research Board, January 2011.
22. Abdel-Aty M., Oloufa A., Hassan H., Ahmed M. and Siddiqui K. (2010) Portable Visibility Warning System for the Safety of Highways, 17th ITS World Congress, October 25-29, Pusan, Korea.

### **Proceedings Refereed By Abstract**

1. Oloufa, A. A.: "*Intelligent Automation of Simulation Modeling*", Proceedings of the 22nd Annual Pittsburgh Conference on Modeling and Simulation, Pittsburgh, May 1991.
2. Oloufa, A. A.: "*Design And Implementation of An Introductory Graduate Course In Graphics*". Proceedings of the ASEE, June 1991 Annual Conference, New Orleans, LA.
3. Oloufa, A. A.: "*Teaching Computer Graphics Courses In Construction Engineering Education*", Proceedings of the ASEE, Annual Conference, Toledo, OH, June 1992.
4. Oloufa, A. A. and Eltahan, A. : "*Geotechnical Data Management : A GIS -Based Approach*". Proceedings of the Eighth National Conference on Computing In Civil Engineering, Dallas, TX , June 1992.
5. Oloufa, A. A.: "*Modeling of Building Construction Activities Using Forms*". Proceedings of the 10<sup>th</sup> International Symposium on Automation and Robotics In Construction (ISARC), Houston, TX, May 1993.
6. Oloufa, A. A.: "*Bringing the Real World to the Classroom with Multimedia*", Proceedings of the ASEE, Annual Conference, Toledo, Canada, June 1994.
7. Oloufa, Amr A. and Ikeda, M.: 1994. *The Fujita Integrated Environment for Automation*, Proceedings of 11<sup>th</sup> International Symposium on Automation and Robotics in Construction, Bristol, England. May. pp. 539-546
8. Oloufa, A. and M. Ikeda. 1995. *Object-Oriented Simulation of Shield Tunneling*. International Conference in Computing in Civil & Building Engineering, ICCCB, July, Berlin. pp. 1315 - 1319.
9. Li, C., R. Thomas and A. Oloufa. 1995. *Development of an Automated Real Time Tracking System for Pavement Compaction*. International Symposium for Automation and Robotics in Construction, ISARC .Warsaw, Poland. pp. 49 - 54.
10. M. Ikeda, A. Oloufa, and S. Sekihara, June, 1996. *An Object Oriented Environment for the Construction Planning of High Rise Buildings*. International Symposium for Automation and Robotics in Construction, ISARC 96, June 1996.
11. Oloufa, A. and M. Ikeda. June 1997. Library-Based Simulation modeling in Construction. *Proceedings of the ASCE Computing Conference*. pp. 198-205.
12. Nguyen, H. and A. Oloufa. June 1997. Construction Planning of high Rise Buildings with an Object Oriented Solid Geometry Model. *Proceedings of the ASCE Computing Conference*. pp. 426-432.

13. Do, W. and A. Oloufa. August 1997. A GPS System for Tracking Pavement Compaction, *Proceedings of the ICCCBCE Conference*, Seoul, Korea. pp. 989-994.
14. Nguyen, H. and A. Oloufa. August 1997. OOSE: A Proposed Object Oriented Solid Geometric Model for AEC, *Proceedings of the ICCCBCE Conference*, Seoul, Korea. pp. 615-620.
15. Oloufa, A., W. Do and R. Thomas, Oct. 1997. Automated Monitoring Compaction Using GPS, *Proceedings of the ASCE Annual Convention and Construction Congress*. pp. 1004-1011.
16. Do, W., A. Oloufa and H. Thomas. Evaluation of GPS devices for a Quality Control System for Compaction Operations. *Proceedings of the Transportation Research Board (TRB) Conference*, January 1999.
17. A. Oloufa, Do, W., and H. Thomas. An Automated System for Quality Control of Compaction Operations: Receiver Test & Algorithms. Sep. 1999. *International Symposium for Automation and Robotics in Construction (ISARC)*, Spain. pp. 67-71.
18. Nguyen, H. and A. Oloufa. March 1999. An Automated Building Design System with Topological Information. *Construction Congress 2000*.
19. Nguyen, H. and A. Oloufa. September 2000. Topology Applications for Design and Construction of Buildings. *Seventeenth Annual Symposium on Automation and Robotics in Construction. (ISARC)*.
20. A. A. Oloufa, February 2001. A Crash Reporting System on Palmpilots. *International Conference on Industry, Engineering, and Management Systems (IEMS 2001)*. Cocoa Beach, FL.
21. A. A. Oloufa, and Radwan, A. E. September 2001. Server-Based Collision Avoidance using DGPS. *8th World Congress on Intelligent Transportation Systems*. Sydney, Australia.
22. Mohamed Fayez, Pär Axelsson, Amr Oloufa, and Yasser Hosni. On the Optimization of Information Intensive Projects: Case of Construction Design. *Fourth MIT-DSM conference*, Cambridge, Massachusetts, October 7-8, 2002.
23. F.A. Moslehy, A.A. Oloufa. February 2004. Laser-based Vibration Technique for Weight Measurement of Commercial Vehicles. Society for Experimental Mechanics. Detroit. MI.
24. A. A. Oloufa, August 2003. Virtual Commercial Vehicle Inspection Stations. *National Rural ITS Conference 2003 (NRITS)*, Palm Harbor, FL.
25. A. A. Oloufa, December 2003. Virtual Weigh Stations: Issues & Technologies. *Florida Department of Transportation – ITS Annual Meeting*. Deerfield Beach, FL.
26. A. A. Oloufa, February 2004. Virtual Commercial Vehicle Inspection Stations. *First International Conference on Virtual & Remote Weigh Stations*, Orlando, FL.
27. ABdel-Aty, Huang, Oloufa and Ekram, A Roadway Safety Analysis of a Fog Related Crashes and Development of a Visibility Warning System, 2nd International Road Federation Middle East Regional Congress, Nov. 29- Dec. 1, 2010, Abu Dhabi.

## **FUNDED RESEARCH PROJECTS**

Application of Triangulation and GIS In Construction

Aug. 1990 - May 1991

University Research Council

\$4,950 (Co-P.I.)

Application of GIS to Geotechnical Engineering

August 1990 -May 1992

Dames and Moore

\$23,500 (P.I.)

Applications of Vector Processing In Volume Calculations of Earthmoving Operations.

August 1990 -May 1992

IBM (Hardware Grant)

\$85,000 (Co-P.I.)

A DBMS for Oahu's Groundwater System, A Pilot Study

Aug. 1991- May 1992

Water Resources Research Center

\$27,000 (Co-P.I.)

The Establishment of a Region Wide Database Using GIS.

Office of Technology Transfer and Economic Development

\$12,500 (P.I.) (Not executed due to move to Penn State)

Automation of Bridge Inspection and Reporting.

University Research Council

\$6,000 (P.I.) (Not executed due to move to Penn State)

An Automated Environment for Soils & Terrain - Dependent Applications

Aug. 1993 - June 1994

Fujita Corporation

\$15,000 (P.I.)

Discrete Event Simulation of Shield Tunneling Operations

June 1994 - Aug. 1995

Fujita Corporation

\$30,000 (P.I.)



A GIS for Planning and Construction

March 1993 - March 1994

Penn State Office of Physical Plant

\$6,000 (P.I.) (Hardware Grant)

A Framework for Post-Occupancy Evaluation.

March 1993 - May 1995

Consortium for the Advancement of Building Sciences

\$25,000 (P.I.)

Impact of Overmanning on Productivity

March 1994 - Oct. 1995

National Electrical Contractors Association

\$70,000 (Co-P.I.)

A Multimedia Project for Fiber Reinforced Concrete

Feb. 1995 - Nov. 1995

Mitchell Fiber

\$7,000 (Co-P.I.)

Evaluation of Real-Time Density Measurement for Compactors

June 1996 - July 1996

Rexworks Corp.

\$7,500 (Co-P.I.)

A Pilot Project for Object-Oriented Representation of Buildings

Oct. 1995 - March 1996

Fujita Corp.

\$30,000 (P.I.)

Constructibility Analysis of Buildings Using Solid Modeling

Sept. 1996 - May 1997

Fujita Corp.

\$4,000 (P.I.)

Development of a Real Time Tracking System and Density Meter Based on Vibratory Responses

February 1997 - November 1997

Ingersoll Rand and Ben Franklin Partnership

\$72,000 (Co P.I.)

Development of a Real-Time Tracking System. Phase 2

August 1997 - May 1998  
Ingersoll-Rand and Ben Franklin Partnership  
\$106,000 (Co P.I.)

Development of Guideline for Presenting Loss of Productivity Claims  
January 1998 - December 1998  
National Electrical Contractors Association  
\$39,500 (Co P.I.)

Application of DGPS for Collision Avoidance in a Wireless Environment.  
November 1999 – August 2000.  
Center for Advanced Transportation System Simulation (CATSS)  
\$50,000. (P.I.)

A Palm-Held Reporting System  
January 2000 - September 2000  
Florida Department of Transportation  
\$50,000 (P.I.)

Positioning Equipment for Transportation and Construction Engineering Research.  
January 2000. (Equipment Grant)  
University of Central Florida.  
\$30,000 (P.I.)

Transit Tracking System.  
May 2001 – July 2002.  
Center for Advanced Transportation System Simulation (CATSS)  
\$55,000. (P.I.)

Tracking of Lymmo Vehicles  
December 2001 – May 2002  
I-4 Corridor Technology Grant  
\$135,000 (P.I.)

Optimization of Transportation Projects using Design Structure Matrix (DSM) and Simulation.  
May 2002 – July 2003.  
Center for Advanced Transportation System Simulation (CATSS)  
\$65,000. (Co-P.I.)

GPS-Aided Asphalt Condition Rating using Infrared Thermography.  
November 2002 – May 2004.  
Florida DOT  
\$89,000. (P.I.)

Moisture monitoring of soil using GPRS.

March 2003 – March 2004.

Center for Advanced Transportation System Simulation (CATSS)

\$45,000 (Co-P.I.)

Non-Intrusive Weight Measurement of Commercial Vehicles

March 2003 – March 2004.

Center for Advanced Transportation System Simulation (CATSS)

\$46,000 (Co-P.I.)

Passenger Demand Infrastructure System

July 1, 2003 – October 1, 2004.

Florida DOT.

\$ 250,000 (P.I.)

Virtual Commercial Vehicle Inspection Stations

February 2003 – July 2005.

Florida DOT.

\$300,000 (P.I.)

Mobile Non-invasive Weigh-in-Motion System

April 2005 – April 2007

Florida DOT

\$225,000 (P.I.)

WIM and DMS to Enhance WIM Commercial Truck Weight Enforcement

October 2006 – November 2008.

Center for Advanced Transportation System Simulation (CATSS)

\$148,000 (P.I.)

Development and Validation of Concept of Operations for the Use of UAVS to Assist  
Emergency Operations in special rules airspace.

October 2006 – November 2008

\$182,000 (P.I.)

Developing an Early Detection System for Reduced Visibility from Fog/Smoke and Means to  
Effectively and Timely Warn Drivers.

June 20, 2008 – June 30, 2010

\$250,000 (Co P.I.)

Technology Deployment for a O-D Study.

Feb 25, 2010 — Aug 31, 2011

\$150,000 (P.I.)

Automated Data Collection for Origin/Destination Studies of Freight Movement

May 15, 2012 — June 15, 2014

\$150,000 (P.I.)

Automated Data Collection for Origin/Destination Studies of Freight Movement  
May 1, 2012 — Jan. 1, 2014 (UTC Program)  
\$100,000 (P.I.)

### **GRADUATE THESIS SUPERVISION**

Sami Spahi	Ph.D., I.E. 5/08	Co-Advisor
Topic:		
Vasu Persaud	M.S. – CE 8/07	Advisor
Topic: <i>Rural Intersection System.</i>		
Engy Serag	Ph.D. – CE 5/07	Advisor
Topic: <i>A Model for loss of productivity in Construction Claims.</i>		
Tarek A. Monem	MS - CE 4/05	Advisor
Topic: <i>Infrared Thermography &amp; GPS for Crack Detection.</i>		
Par Axelsson	MS - IE 4/03	Co-Advisor
Topic: <i>DSM Applications in Building Design and Construction.</i>		
Tang-Hung Nguyen	Ph.D.-AE 4/99	Advisor
Topic: <i>Automated Deduction of Topology in Building Design and Construction.</i>		
Won Do	M.S.- CE 8/97	Advisor
Topic: <i>An improved algorithm for automated compaction with Positioning.</i>		
Julie Anderson	M.S. - AE 8/96	Advisor
Topic: <i>A Design-Build guide for engineers and Architects.</i>		
Joe Kranz	M.S. - AE 12/96	Advisor
Topic: <i>A Self Enforcement Safety Guideline for Contractors.</i>		
John Moskowitz	M.S. - AE 12/95	Co-Advisor
Topic: <i>A System for FRP concrete design.</i>		
John Korka	M.S. - CE 6/95	Advisor
Topic: <i>Computerized Maintenance Management Systems for Buildings</i>		
Cheng-Che Li	M.S. - CE 4/95	Advisor

*Topic: An algorithm for automated compaction of soil.*

Cindy Carpenter                      M.S. - AE    5/95    Co-Advisor

*Topic: A Framework for Post Occupancy Evaluation of Buildings.*

Reynaldo Espino    1989 Civil Engineering    Co-Advisor

*Topic: GIS in Civil Engineering.*

Ahmed A. Eltahan    1991 Civil Engineering    Advisor

*Topic: GIS in Geotechnical Engineering*

Currently supervising 3 Ph.D. students.

### **SOFTWARE PROGRAMS**

1. S3: Simulation of Shield Tunneling Systems: A software package for the simulation of shield tunneling projects. User gives simulation parameters and watches animated representation of the construction progress. Users can edit a multitude of variables.
2. FIESTA: Fujita Integrated Environment for Soils and Terrain Dependent Applications: This Software integrates a database of soils information with a geographic information system for educational uses, it illustrates to students concepts of relational data base designs, GIS, visual programming and software integration methods.
3. S3 (EXTEND) A simulation library developed by implementing a new concept developed by A. Oloufa for the simulation of construction projects. Currently being tested by Fujita, a Japanese construction company.
4. FOCUS: A solid modeling based software system for the visualization of building construction projects.
5. CTS-Raster: A raster-based system for the quality control of asphalt pavement.
6. CTS-Vector: A raster-based system for the quality control of asphalt pavement utilizing real-time positioning of construction equipment.
7. ColDet & ColDetSrv: Software for vehicle tracking and detection. PC-based software utilizing GPS and wireless communications.
8. PCRS: Palmpilot Crash Reporting System. Handheld software for crash reporting.
9. TripTrak: Data storage and decoding program for wireless communications.
10. TripTrakListen: Data storage and decoding program for wireless communications.
11. Bus Tracking Website: Data-driven Website for School Bus Tracking.
12. Trigger matrix for Construction Design Projects.
13. CVROCS Suite for Commercial Vehicle Applications.

## **REPORTS TO SPONSOR**

1. Application of Triangulation and GIS In Construction. May 1991.
2. A GIS-based database for Dames & Moore Projects. May 1992.
3. A DBMS for Oahu's Groundwater System. May 1992.
4. Fujita Integrated Environment for Soils and Terrain-Dependant Applications. Fujita Corporation, Japan, December 1993
5. Simulation of Shield Tunneling, Progress Report 1, Fujita Corporation. Aug., 1994
6. Simulation of Shield Tunneling, Progress Report 2, Fujita Corporation. Sept., 1994
7. Simulation of Shield Tunneling, Progress Report 3, Fujita Corporation. Dec., 1994
8. A What-to-do-Guide for Schedule Acceleration and Compression, National Electric Contractors Association, Feb., 1995
9. Simulation of Shield Tunneling, Progress Report 4, Fujita Corporation. Mar., 1995
10. Concept File for Schedule Acceleration: , National Electric Contractors Association, NECA. April, 1995
11. The Quantification of the Impacts on Labor Efficiency in Projects with Overmanning, National Electrical Contractors Association, November, 1995.
12. Primer for Schedule Acceleration. National Electrical Contractors Association, Dec. 1995
13. Construction Simulation of Shield Tunneling Projects Using *MODSIM II* Program Code, 1/96.
14. Labor In Efficiencies Caused by Schedule Acceleration, Final Report, NECA, March 1996.
15. A Pilot Project for Object-Oriented Modeling of Buildings Report 1., Dec. 1995.
16. A Pilot Project for Object-Oriented Modeling of Buildings Report 1., June 1996.
17. Measurements of Trash Compaction Density Using Compactor Self-Vibration Levels. Report, Aug. 1996.
18. A Modular System for the Simulation of Shield Tunnels. Report 1. December 1996.
19. Constructibility Study using Solid Modeling. Report 1. October 1996.
20. MPD-MCDS: An Integrated System for the Design and Manufacturing Using the Bridgeways System. Part 1, to Bridgeway International, May, 1997.
21. MPD-MCDS: An Integrated System for the Design and Manufacturing Using the Bridgeways System. Part 2, to Bridgeway International, August, 1997.
22. Development of a Real-Time Tracking System and Density Meter Based on Compactor Vibratory Responses, Phase 1, Final Report, September, 1997
23. Application of DGPS for Collision Avoidance in a Wireless Environment. Phase II. March 2000.
24. A Palm-Held Reporting System. Phase 1. March 2000.
25. A Palm-Held Reporting System. Phase II. June 2000.

26. Application of DGPS for Collision Avoidance in a Wireless Environment. Final Report. February 2001.
27. A Palm-Held Reporting System. Final Report. October 2000.
28. Transit Tracking using GPS and Wireless technology. Progress Report. April 2002.
29. GPS-Aided Asphalt Condition Rating using Infrared Thermography. Progress Report. December 2002.
30. Infrared Thermography for Asphalt Crack Detection. Progress Report 1. January 2003.
31. Infrared Thermography for Asphalt Crack Detection. Progress Report 2. May 2003.
32. Infrared Thermography for Asphalt Crack Detection. Progress Report 3. Sep. 2003.
33. Virtual Commercial Vehicle Stations. Progress Report 1. Sep. 2003.
34. Virtual Commercial Vehicle Stations. Progress Report 2. Dec. 2003.
35. Virtual Commercial Vehicle Stations. Progress Report 6. Dec. 2006.
36. Virtual Commercial Vehicle Stations. Final Report.
37. Rural Intersection System – Final Report.
38. Non-Intrusive weight system – Progress report.

### **Professional Registration**

P.E. in California. License #43329.

### **SERVICE**

#### **University of Central Florida**

University

1. Senate.
2. Senate Personnel Committee.
3. Sick Leave pool Committee.

College:

1. Promotion & Tenure Committee (2008)

Department

1. Curriculum Committee.
2. Structures Search Committee (2002)
3. Structures Search Committee (2003)
4. Infrastructure Search Committee (2008)
5. Instructor Search Committee (2009)

## **Penn State University**

### Department

- 1- Tuition Surcharge Committee 1992 - 1994
- 2- Curriculum Committee, 1992 - present
- 3- Faculty-in-charge of Macintosh Lab, 1992 -1994
- 4- AE MEng. Committee 1995

### College

1. Computer Science 201 Course Modification Committee, 1992 –1993
2. ECSEL Faculty Advisory Committee, 1992 –1994
3. ECSEL Computer Lab Committee 1993 –1995

## **University of Hawaii**

### Department

- 1- Chairman, Computer Committee (Fall 1989 - Fall 1992)
- 2- Member, Curriculum Committee (Fall 1989 - Fall 1992)
- 3- Member, Graduate Program Committee (Fall 1989 - Spring 1990)

### University

1. Member, ITAC (Fall 1990 - Fall 1992). Information Technology Advisory Committee (appointed by the University President).
2. Senator, Faculty Senate (Fall 1990 - Fall 1992). Elected as one of two representatives for the College of Engineering.
3. Chairman, CAPP (Fall 1991 - Fall 1992). Faculty Senate Committee on Academic Planning and Policy.
4. Member, CAPP (Fall 1990 - Spring 1990). Faculty Senate Committee on Academic Planning and Policy.

## **Refereed Journal Reviewer**

### American Society of Civil Engineers:

- a. Journal of Construction Engineering & Management
- b. Journal of Computing in Civil Engineering
- c. Journal of Architectural Engineering
- d. Journal of Transportation Engineering
- e. Journal of Management in Engineering

Journal of Automation in Construction.

Journal of Microcomputers in Civil Engineering.



## **National & International**

1. National Science Foundation Japan Proposal Review Panel. 2006.
2. National Science Foundation Japan Panel to select students for a fellowship in Japan. 1995
3. National Research Council of Canada Reviewer of proposals for GIS 1993 - 1994.
4. American Society of Civil Engineers. Construction Research Council (CRC). Past-Past Chair and Chair of the Awards Program. 1999
5. American Society of Engineering Education. Chair, Vice-Chair, and currently Treasurer of the Construction Division.
6. University of Alberta, Canada. Department of Civil Engineering. Invited as an external member of a Ph.D. thesis. 2000.
7. Indiana University- Purdue University at Indianapolis. Chair of Construction Technology Program Review Committee. 2001
8. Concordia University, Canada. Department of Civil Engineering. Invited as an external member of a Ph.D. thesis. 2002
9. International Conference Committee, International Association for Automation in Construction, Taiwan, 2001.
10. International Conference Committee, Second International Conference on Construction Hong Kong, 2003.
11. International Editorial Board: Journal of Automation in Construction 2008.