



Amir H. Behzadan, Ph.D., A.M.ASCE

Wharton Smith Faculty Fellow and Assistant Professor

Director of Decision Support, Information Modeling, and Automation Lab (DESIMAL)



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EDUCATION

UNIVERSITY OF MICHIGAN, ANN ARBOR, MI

Doctor of Philosophy, Civil Engineering ■ 2008

Dissertation Title: ARVISCOPE: Georeferenced Visualization of Dynamic Construction Processes in Three-Dimensional Outdoor Augmented Reality

Advisor: Dr. Vineet R. Kamat

Master of Engineering, Construction Engineering and Management ■ 2005

Thesis Title: UM-AR-GPS-ROVER Augmented Reality Platform: Visualization of Construction Graphics in Outdoor Augmented Reality

Advisor: Dr. Vineet R. Kamat

SHARIF UNIVERSITY OF TECHNOLOGY, IRAN

Bachelor of Engineering, Civil Engineering ■ 2003

Thesis Title: Cementation Effects on Geotechnical Properties of Sandy Coarse Aggregate Soils

Advisor: Dr. Mohsen Haeri

RESEARCH INTERESTS

- Intelligent and autonomous construction systems
- Simulation and visualization of engineering operations
- Construction process data mining and knowledge modeling
- Design and construction integration
- Information-rich collaborative engineering education

PROFESSIONAL EXPERIENCE

UNIVERSITY OF CENTRAL FLORIDA, ORLANDO, FL

Assistant Professor (September 2009 –)

Department of Civil, Environmental, and Construction Engineering

- Established a research program and laboratory (*DESIMAL*[®]) to conduct research in intelligent infrastructure and construction in areas of information technology, automation, computing, simulation and visualization, and data processing.
- Taught core undergraduate and graduate courses in civil and construction engineering, and served as academic advisor.
- Designed and taught one new undergraduate course in “Civil Engineering Measurements”, and two new graduate construction engineering courses titled “Decision Support for Infrastructure Projects”, and “Design and Monitoring of Construction Processes”.
- Served on several Department and College committees, chaired the Department Lecturer Search Committee in 2013, and served as the Faculty Advisor of the UCF Student Chapter of the American Society of Civil Engineers (ASCE).

CITY UNIVERSITY OF NEW YORK, NEW YORK, NY

Assistant Professor (September 2008 – August 2009)

Department of Construction Management and Civil Engineering Technology

New York City College of Technology

- Taught core undergraduate courses in construction engineering and management, and civil engineering, and served as academic advisor.
- Developed three undergraduate courses for a new ABET accredited B.Tech. program in Construction Engineering Technology.

UNIVERSITY OF MICHIGAN, ANN ARBOR, MI

Post-Doctoral Researcher (May 2008 – August 2008)

Department of Civil and Environmental Engineering

- Conducted research on the conception, design, and implementation of an outdoor augmented reality system for accident prevention during excavation.

Graduate Research Assistant (2005-08)

Department of Civil and Environmental Engineering

- Conducted research on the design and implementation of a mobile 3D outdoor augmented reality system for visualizing simulated construction engineering operations at the process level.
- Authored several technical papers in professional engineering journals.
- Presented latest research findings in well recognized and prestigious national and international conferences and seminars.
- Supervised undergraduate research interns through the University of Michigan UROP (Undergraduate Research Opportunity Program)

Laboratory Assistant (2005)

Construction Engineering Laboratory

Department of Civil and Environmental Engineering

- Advised undergraduate and graduate students in team projects that required construction plan reading and computer applications.
- Monitored the equipment and construction book and manual reserve.

OTHER WORK EXPERIENCE

Educational Consultant (2013 –)

Engineer Educators, Tallahassee, FL

- Prepared PE review materials including tutorials and solved questions.
- Topics included construction project scheduling.

Educational Consultant (2012 –)

EIT Experts, San Jose, CA

- Prepared FE review lectures, problem solving techniques, and solved questions.
- Topics included statics, mechanics of materials, and construction.

Investment Analyst (2003-04)

Iran Foreign Investments Co. (IFIC), Tehran, Iran

- Worked on several international investment opportunities in different sectors such as food industry, manufacturing, and energy.
- Represented the company twice as an alternate member in the board of directors' annual meetings.
- Prepared periodical work progress and investment portfolio reports.

Project Engineer and Inspector (2000-03)

SETEC Batiment Engineering Co. (headquartered in France), Tehran, Iran

- Regularly inspected the construction of the reinforced concrete structure of a 56-story residential and commercial skyscraper in Tehran.
- Conducted on-site material delivery control, ACI and ASTM material tests, and work quality approval.
- Handled construction change orders and regularly evaluated work progress.

Intern (1998-99)

Sepah Sakhtman Construction Co., Tehran, Iran

- Visited several construction sites and prepared progress reports on a regular basis.
- Worked in the office on updating construction schedules and progress sheets, as well as assessed periodic work reports submitted by the contractors.

HONORS AND AWARDS

Keynote Speaker, VI Conference on Information Technology and Communication in Construction (TIC 2013), Universidade Estadual de Campinas (UNICAMP), Campinas, Brazil, 2013

ASCE Faculty Advisor of the Year Award, ASCE Florida Section (Nominated by the ASCE Florida East Central Branch), 2013

Information Fluency (IF) Travel Award, Office of Information Fluency, University of Central Florida, 2013 (for CONVR 2013, London, UK)

Distinguished New Faculty Award, International Academy for the Scholarship of Learning Technology, 23rd International Conference on College Teaching and Learning, 2012

Outstanding New Teaching Award, American Society of Engineering Education (ASEE) Southeastern (SE) Section, 2012

2011 ASCE Outstanding Reviewer, American Society of Civil Engineers (ASCE), Journal of Construction Engineering and Management, Reston, VA, 2012

2010 ASCE Outstanding Reviewer, American Society of Civil Engineers (ASCE), Journal of Construction Engineering and Management, Reston, VA, 2011

Wharton Smith Endowed Faculty Fellowship, College of Engineering and Computer Science, University of Central Florida, 2010-2014

ExCEED Fellowship, American Society of Civil Engineers (ASCE), West Point, NY, 2009

FIATECH 2008 CETI Award, Celebration of Engineering & Technology Innovation, Category of Outstanding Student Researcher in New and Emerging Technology R&D, Henderson, NV, 2009

Cited in Marquis “Who’s Who in America”, 2010

Professional Development Advisory Council (PDAC) Travel Grant, New York City College of Technology, City University of New York, 2009 (for Construction Research Congress (CRC), Seattle, WA)

Featured in the New York City College of Technology “View Book” as a New Face in the City University of New York (CUNY), 2008

1st place Award, Engineering Graduate Symposium (oral presentation competition), session of Modeling for Manufacturing and Fabrication, University of Michigan, 2007

2nd place Award, Engineering Graduate Symposium (poster presentation competition), combined session of Modeling for Manufacturing and Fabrication and Modeling Operations and Ergonomics, University of Michigan, 2007

Conference Travel Grant, Horace H. Rackham School of Graduate Studies, University of Michigan, 2007 (for Winter Simulation Conference, Washington, DC)

Rackham International Student Fellowship, Horace H. Rackham School of Graduate Studies, University of Michigan, 2007

Engineering Academic Scholar, College of Engineering, University of Michigan, 2006

Conference Travel Grant, Horace H. Rackham School of Graduate Studies, University of Michigan, 2006 (for Winter Simulation Conference, Monterey, CA)

2nd place Award, Engineering Graduate Symposium (oral presentation competition), session of Industrial and Systems Engineering, University of Michigan, 2006

John L. Tishman Fellowship, College of Engineering, University of Michigan, 2005-06

Conference Travel Grant, Horace H. Rackham School of Graduate Studies, University of Michigan, 2005 (for Winter Simulation Conference, Orlando, FL)

TEACHING EXPERIENCE

Instructor ■ Department of Civil, Environmental, and Construction Engineering, University of Central Florida

(Q1: student perception evaluated on a scale of 5.00)

<u>Number</u>	<u>Level</u>	<u>Course Title</u>	<u>Semester</u>	<u>Size</u>	<u>Q1</u>
CCE6211	G	Design and Monitoring of Construction Processes	SP-12	13	4.50
CCE5205	G	Decision Support for Infrastructure Projects	FA-13	09	
CCE5205	G	Decision Support for Infrastructure Projects	FA-12	08	N/A
CCE5205	G	Decision Support for Infrastructure Projects	FA-11	06	5.00
CCE4004	U	Construction Methods	SP-13	16	5.00
CCE4004	U	Construction Methods	SP-11	28	4.45
CGN3700C	U	Civil Engineering Measurements	SP-14	50	
CGN3700C	U	Civil Engineering Measurements	FA-13	59	
CGN3700C	U	Civil Engineering Measurements	SP-13	79	4.25
CGN3700C	U	Civil Engineering Measurements	FA-12	91	4.11
CGN3700C	U	Civil Engineering Measurements	SP-12	67	4.19
CGN3700C	U	Civil Engineering Measurements	FA-11	59	4.37
CGN3501C	U	Civil Engineering Materials	SP-11	56	4.17
CGN3501C	U	Civil Engineering Materials	FA-10	50	3.83
CGN3501C	U	Civil Engineering Materials	FA-09	14	3.88
EGN3331	U	Mechanics of Materials	SP-10	67	4.00

Instructor ■ Department of Construction Management and Civil Engineering Technology, New York City College of Technology, City University of New York

<u>Number</u>	<u>Level</u>	<u>Course Title</u>	<u>Semester</u>	<u>Size</u>
CMCE2455	U	Materials and Methods of Construction	FA-08	11
CMCE2320	U	Construction Management II	SP-09	32
CMCE1224	U	Materials and Methods of Construction II	SP-09	15
CMCE1224	U	Materials and Methods of Construction II	FA-08	18
CMCE1220	U	Construction Management I	SP-09	45
CMCE1220	U	Construction Management I	FA-08	37

Teaching Assistant ■ Department of Civil and Environmental Engineering, University of Michigan

<u>Number</u>	<u>Level</u>	<u>Course Title</u>	<u>Semester</u>	<u>Size</u>
CEE633	G	Construction Management Information Systems	FA-07	09
CEE531	G	Construction Cost Engineering	FA-06	20

GRANTS AND PROPOSALS

EXTERNAL FUNDING AT UCF (TOTAL \$322,429):

Engineering Information Foundation (EiF), PI, 2013 – 2014 ■ \$25,000

Title: Assessing the Benefits of Mobile Augmented Reality in Enhancing Student Communication and Teamwork Skills

Bentley Systems, PI, 2013 ■ \$11,760

Title: Geometric Optimization of Scaffolding Components in Construction Workspaces (Provided in form of a fully-paid 3 ½ -month internship to a *DESIMAL* graduate student)

Bentley Systems, PI, 2012 ■ \$11,200

Title: Real Time Operational Data Collection and Dynamic Data-Driven Simulation for Next Generation Construction Planning (Provided in form of a fully-paid 4-month internship to a *DESIMAL* graduate student)

Florida Department of Transportation (FDOT), Co-PI (Share: 25%) ■ PI: Wendell Lawther, 2012 – 2013 ■ \$146,969

Title: Flexible and Rapid Decision Making Related to Public-Private Partnerships (P3) Funding Models in Transportation

Florida Department of Transportation (FDOT), Co-PI (Share: 40%) ■ PI: Boohyun Nam, 2012 – 2013 ■ \$49,500

Title: Evaluating the Use of Waste-to-Energy (WTE) Ash as Road Construction Materials

Hinkley Center for Solid and Hazardous Waste Management (HCSHWM), PI, 2011 – 2012 ■ \$48,000

Title: Evaluating the Use of Construction and Demolition Debris as Alternative Ingredient Materials

Hinkley Center for Solid and Hazardous Waste Management (HCSHWM), Co-PI (Share: 50%) ■ PI: Debra Reinhart, 2010 – 2011 ■ \$30,000

Title: Construction and Demolition Debris Recovery and Recycling

INTERNAL FUNDING AT UCF (TOTAL \$16,440):

In-House Research Grant, PI, 2011 ■ \$7,500

Title: An Interactive Augmented Reality-Based Educational Tool for Construction and Civil Engineering

In-House Research Grant, PI, 2010 ■ \$7,500

Title: Achieving Optimal Crane Task Plans Using GPS and Intelligent Computing

Undergraduate Research Initiative (URI), PI, 2010 ■ \$1,440

Title: Design of a Robust Computerized System for Automated Lumber Grading

PENDING RESEARCH PROPOSALS (TOTAL \$400,000):

National Science Foundation (NSF), PI, 2014 – 2019 ■ \$400,000

Title: CAREER: Knowledge-Based Models for Self-Evolving Simulation of Construction Operations

OTHER FUNDING (TOTAL \$195,433):

Professional Staff Congress Research Grant (PSC-CUNY), PI, 2009 ■ \$2,600

Title: Design of an Automated Damage Prevention System for Excavation Machinery
(Funding administered and made available through the CUNY Research Foundation)

Graduate Research and Technology Initiative (GRTI) Grant, PI, 2008 ■ \$185,833

Title: Application of 3D Laser Scanners in Interdisciplinary Research Projects
(Funding administered and made available through the CUNY Research Foundation)

Graduate Student Research Grant, 2007 ■ \$3,000

Title: Rapid Prototyping and Remote Sensing of the Real World for Augmented Reality
Engineering Applications
(Funding administered and made available through the UM Rackham School of Graduate Studies)

Spring/Summer Research Grant, 2006 ■ \$4,000

Title: Interactive Visualization of Engineering Graphics in Mobile Outdoor Augmented Reality
(Funding administered and made available through the UM Office of the Vice President for Research)

CITATION REPORT †

Citations Publication ID

71 – 80

61 – 70 J14

51 – 60

41 – 50 J16, C29

31 – 40 J15

21 – 30 J13

11 – 20 C27, C28, T1

1 – 10 J9, J10, J11, J12, C10, C13, C14, C16, C21, C22, C24, C25, C26, T2

† Citation Report from Google Scholar.

Total Citations: 349 (as of January 2014)

h-index: 9

JOURNAL PAPERS

- J1. Akhavian R., Ahn C., **Behzadan A.H.**, Lee S. (2014), “Predictive Simulation Modeling of Emission and Fuel Consumption in Heavy Construction and Infrastructure Projects”, ASCE Journal of Computing in Civil Engineering, Reston, VA (submission planned for March 2014)
- J2. Akhavian R., **Behzadan A.H.** (2014), “Evaluation of Queuing Systems for Knowledge-Based Simulation of Construction Processes”, ASCE Journal of Computing in Civil Engineering, Reston, VA (submission planned for January 2014)
- J3. **Behzadan A.H.**, Menassa C., Pradhan A. (2014), “Enabling Real Time Simulation of Architecture, Engineering, Construction (AEC) Systems: A Review of Formalism, Data

Representation, and Model Architecture”, *Journal of Information Technology in Construction* (in review)

- J4. Shirazi A., **Behzadan A.H.** (2014), “Design and Assessment of a Mobile Augmented Reality-Based Information Delivery Tool for Construction and Civil Engineering Curriculum”, *ASCE Journal of Professional Issues in Engineering Education and Practice*, Reston, VA (in review)
- J5. Khosravi Y., Mahabadi H.A., Hajizadeh E., Rangi N.H., Bastani H., **Behzadan A.H.** (2014), “Factors Influencing Unsafe Behaviors and Accidents on Construction Sites: A Review”, *International Journal of Occupational Safety and Ergonomics*, Warsaw, Poland (in press)
- J6. Nam B.H., Maherinia H., **Behzadan A.H.** (2014), “Mechanical Characterization of Asphalt Tear-off Roofing Shingles in Hot-Mix Asphalt”, *Elsevier Journal of Construction and Building Materials*, 50, New York, NY, 308-316
- J7. Akhavian R., **Behzadan A.H.** (2013), “Knowledge-Based Simulation Modeling of Construction Fleet Operations Using Multimodal-Process Data Mining”, *ASCE Journal of Construction Engineering and Management*, 139(11), Reston, VA, 04013021-1-11
- J8. **Behzadan A.H.**, Kamat V.R. (2013), “Enabling Discovery Based Learning in Construction Using Telepresent Augmented Reality”, *Elsevier Journal of Automation in Construction (Special Issue on Applications of Augmented Reality in Architecture, Engineering and Construction)*, 33, New York, NY, 3-10
- J9. Dong S., **Behzadan A.H.**, Feng C., Kamat V.R. (2013), “Collaborative Visualization of Engineering Processes Using Tabletop Augmented Reality”, *Elsevier Journal of Advances in Engineering Software*, 55, New York, NY, 45-55
- J10. Akhavian R., **Behzadan A.H.** (2012), “An Integrated Data Collection and Analysis Framework for Remote Monitoring and Planning of Construction Operations”, *Elsevier Journal of Advanced Engineering Informatics*, 26(4), New York, NY, 749-761
- J11. **Behzadan A.H.**, Kamat V.R. (2011), “Integrated Information Modeling and Visual Simulation of Engineering Operations Using Dynamic Augmented Reality Scene Graphs”, *Journal of Information Technology in Construction (Special Issue on Use of Virtual World Technology in AEC)*, Volume 16, International Council for Research and Innovation in Building and Construction (CIB), Rotterdam, Netherlands, 259-278
- J12. **Behzadan A.H.**, Kamat V.R. (2010), “Scalable Algorithm for Resolving Incorrect Occlusion in Dynamic Augmented Reality Engineering Environments”, *Journal of Computer-Aided Civil and Infrastructure Engineering*, 25(1), Blackwell Publishers, Malden, MA, 3-19
- J13. **Behzadan A.H.**, Kamat V.R. (2009), “Automated Generation of Operations Level Construction Animations in Outdoor Augmented Reality”, *ASCE Journal of Computing in Civil Engineering (Special Issue on Graphical 3D Visualization in AEC)*, 23(6), Reston, VA, 405-417

- J14. **Behzadan A.H.**, Aziz Z., Anumba C.J., Kamat V.R. (2008), “Ubiquitous Location Tracking for Context-Specific Information Delivery on Construction Sites”, Elsevier Journal of Automation in Construction, 17(6), New York, NY, 737-748
- J15. **Behzadan A.H.**, Timm B.W., Kamat V.R. (2008), “General-Purpose Modular Hardware and Software Framework for Mobile Outdoor Augmented Reality Applications in Engineering”, Elsevier Journal of Advanced Engineering Informatics, 22(1), New York, NY, 90-105
- J16. **Behzadan A.H.**, Kamat V.R. (2007), “Georeferenced Registration of Construction Graphics in Mobile Outdoor Augmented Reality”, ASCE Journal of Computing in Civil Engineering, 21(4), Reston, VA, 247-258
- J17. **Behzadan A.H.** (2003), “Cementation Effects on Geotechnical Parameters of Sandy Gravel Soils”, Journal of Civil Engineering, 32, Tehran, Iran (ISSN: 1023-7437) (In Farsi)

BOOKS AND BOOK CHAPTERS

- B1. **Behzadan A.H.**, Dong S., Kamat V.R. (2012), “Chapter 5 - Mobile and Pervasive Construction Visualization Using Outdoor Augmented Reality”, In Mobile and Pervasive Computing in Construction, Eds. Chimay J. Anumba and Xiangyu Wang, John Wiley & Sons, Hoboken, NJ, 54-85, ISBN 0470658010
- B2. Kamat V.R., **Behzadan A.H.** (2006), “GPS and 3DOF Tracking for Georeferenced Registration of Construction Graphics in Outdoor Augmented Reality”, Lecture Notes in Computer Science (Intelligent Computing in Engineering and Architecture), Ed. Ian F.C. Smith, Volume 4200/2006, Springer, New York, NY, 368-375, ISSN 0302-9743
- B3. Sodagar H., **Behzadan A.H.** (2002), “Strength of Materials and Structural Analysis”, ISBN 964-6471-46-3, Tehran, Iran (In Farsi)

REFEREED CONFERENCE PAPERS

- C1. Akhavian R., **Behzadan A.H.** (2014), “Knowledge-Based Operations-Level Simulation Model Generation Using Construction Resource and Process Data”, (to appear in) Proceedings of the Construction Research Congress (CRC), Atlanta, GA
- C2. Vassigh S., Newman W., Zhu Y., Chen S.C., Graham S., **Behzadan A.H.** (2014), “Collaborative Learning in Building Sciences Enabled by Augmented Reality”, (to appear in) Proceedings of the 2014 Architectural Research Centers Consortium (ARCC) Conference, Manoa, HI (abstract in review)
- C3. Shirazi A., **Behzadan A.H.** (2013), “Technology-Enhanced Learning in Construction Education Using Mobile Context-Aware Augmented Reality Visual Simulation”, Proceedings of the 2013 Winter Simulation Conference, Washington, DC (invited paper)
- C4. Akhavian R., **Behzadan A.H.** (2013), “Automated Knowledge Discovery and Data-Driven Simulation Model Generation of Construction Operations”, Proceedings of the 2013 Winter Simulation Conference, Washington, DC

- C5. Akhavian R., **Behzadan A.H.** (2013), “Simulation-Based Evaluation of Fuel Consumption in Heavy Construction Projects By Monitoring Equipment Idle Times”, Proceedings of the 2013 Winter Simulation Conference, Washington, DC (invited paper)
- C6. Akhavian R., **Behzadan A.H.** (2013), “Design Requirements of an Automated Data-Driven Simulation Model Generator for Construction Operations”, Proceedings of the 1st International Conference on Civil and Building Engineering Informatics (ICCBEI), Tokyo, Japan
- C7. Shirazi A., **Behzadan A.H.** (2013), “Assessing the Pedagogical Value of Augmented Reality-Based Learning in Construction Engineering”, Proceedings of the 13th International Conference on Construction Applications of Virtual Reality (CONVR), London, UK
- C8. Lee S., **Behzadan A.H.**, Mohamed Y., Kandil A. (2013), “Grand Challenges in Simulation for the Architecture, Engineering, Construction and Facility Management Industry”, Proceedings of the ASCE International Workshop on Computing in Civil Engineering, Los Angeles, CA
- C9. Akhavian R., **Behzadan A.H.** (2012), “Remote Monitoring and Control of Dynamic Construction Processes Using Automated Equipment Tracking”, Proceedings of the Construction Research Congress (CRC), West Lafayette, IN
- C10. Zavichi A., **Behzadan A.H.** (2012), “Creating Automated Crane Work Plans Using Real Time Operational Data and Predictive Analysis”, Proceedings of the Construction Research Congress (CRC), West Lafayette, IN
- C11. **Behzadan A.H.**, Kamat V.R. (2012), “A Framework for Utilizing Context-Aware Augmented Reality Visualization in Engineering Education”, Proceedings of the 12th International Conference on Construction Applications of Virtual Reality (CONVR), Taipei, Taiwan
- C12. **Behzadan A.H.**, Kamat V.R. (2012), “Exploring the Potential of Context-Aware Augmented Reality in Construction Engineering Education”, Proceedings of the 23rd International Conference on College Teaching and Learning (ICCTL), Ponte Vedra Beach, FL (selected paper)
- C13. **Behzadan A.H.**, Iqbal A., Kamat V.R. (2011), “A Collaborative Augmented Reality Based Modeling Environment for Construction Engineering and Management Education”, Proceedings of the 2011 Winter Simulation Conference, Phoenix, AZ (invited paper)
- C14. Akhavian R., **Behzadan A.H.** (2011), “Dynamic Simulation of Construction Activities Using Real Time Field Data Collection”, Proceedings of the 18th Workshop of Intelligent Computing in Engineering and Architecture (EG-ICE), Enschede, Netherlands
- C15. Akhavian R., **Behzadan A.H.** (2011), “Dynamic Data Driven Simulation of Ongoing Construction Operations”, Proceedings of the 3rd International and 9th Construction Specialty Conference, Ottawa, Canada
- C16. Zavichi A., **Behzadan A.H.** (2011), “A Real Time Decision Support System for Enhanced Crane Operations in Construction and Manufacturing”, Proceedings of the ASCE International Workshop on Computing in Civil Engineering, Miami, FL

- C17. Toth M.S., Reinhart D.R., **Behzadan A.H.** (2011), “A Comprehensive Inventory Model to Promote the Practice of Construction and Demolition Debris Recycling”, Proceedings of the 104th Annual Conference of the Air and Water Management Association (A&WMA), Orlando, FL
- C18. **Behzadan A.H.**, Kamat V.R. (2009), “Automated Generation of Dynamic Walk-Through Animations of Simulated Engineering Operations in Augmented Reality Environment”, Proceedings of the 16th Workshop of Intelligent Computing in Engineering and Architecture (EG-ICE), Berlin, Germany
- C19. **Behzadan A.H.**, Kamat V.R. (2009), “Visualization of Vehicular Traffic in Augmented Reality for Improved Planning and Analysis of Road Construction Projects”, Proceedings of the National Science Foundation (NSF) Engineering Research and Innovation Conference, Honolulu, HI
- C20. **Behzadan A.H.**, Kamat V.R. (2009), “A Robust Method for Resolving Incorrect Visual Occlusion in Dynamic Augmented Reality Environments of Animated Engineering Operations”, Proceedings of the National Science Foundation (NSF) Engineering Research and Innovation Conference, Honolulu, HI
- C21. **Behzadan A.H.**, Kamat V.R. (2009), “Interactive Augmented Reality Visualization for Improved Damage Prevention and Maintenance of Underground Infrastructure”, Proceedings of the 2009 Construction Research Congress (CRC), Seattle, WA
- C22. **Behzadan A.H.**, Kamat V.R. (2008), “Simulation and Visualization of Traffic Operations in Augmented Reality for Improved Planning and Design of Road Construction Projects”, Proceedings of the 2008 Winter Simulation Conference, Miami, FL (invited paper)
- C23. **Behzadan A.H.**, Kamat V.R. (2008), “Resolving Incorrect Occlusion in Augmented Reality Animations of Simulated Construction Operations”, Proceedings of the 15th Workshop of Intelligent Computing in Engineering and Architecture (EG-ICE), Plymouth, UK
- C24. **Behzadan A.H.**, Kamat V.R. (2007), “Enabling Smooth and Scalable Dynamic 3D Visualization of Discrete-Event Construction Simulations in Outdoor Augmented Reality”, Proceedings of the 2007 Winter Simulation Conference, Washington, DC (invited paper)
- C25. **Behzadan A.H.**, Kamat V.R. (2007), “Reusable Modular Software Interfaces for Outdoor Augmented Reality Applications in Engineering”, Proceedings of the ASCE International Workshop on Computing in Civil Engineering, Pittsburgh, PA
- C26. **Behzadan A.H.**, Khoury H.M., Kamat V.R. (2006), “Structure of an Extensible Augmented Reality Framework for Visualization of Simulated Construction Processes”, Proceedings of the 2006 Winter Simulation Conference, Monterey, CA (invited paper)
- C27. **Behzadan A.H.**, Kamat V.R. (2006), “Animation of Construction Activities in Outdoor Augmented Reality”, Proceedings of the 11th International Conference on Computing and Decision Making in Civil and Building Engineering (ICCCBE-XI), Montreal, QB, Canada

- C28. Kamat V.R., **Behzadan A.H.** (2006), “GPS and 3DOF Tracking for Georeferenced Registration of Construction Graphics in Outdoor Augmented Reality”, Proceedings of the 13th Workshop of Intelligent Computing in Engineering and Architecture (EG-ICE), Ascona, Switzerland (Selected for Publication in Lecture Notes in Computer Science by Springer)
- C29. **Behzadan A.H.**, Kamat V.R. (2005), “Visualization of Construction Graphics in Outdoor Augmented Reality”, Proceedings of the 2005 Winter Simulation Conference, Orlando, FL
- C30. Haeri S.M., Banasiri J., **Behzadan A.H.** (2002), “Evaluation of the Effect of Artificial Cementation on Shear Strength of Gravely Soils by Using Large Direct Shear Box”, Proceedings of the 3rd International Conference on Geotechnical Engineering and Soil Mechanics (ICGESM), Tehran, Iran (In Farsi)

TECHNICAL REPORTS

- R1. **Behzadan A.H.**, Reinhart D.R., Nam B.H. (2013), “Evaluating the Use of Construction and Demolition Debris as Alternative Ingredient Materials”, Annual Project Report Submitted to the Hinkley Center for Solid and Hazardous Waste Management (HCSHWM), Department of Civil, Environmental, and Construction Engineering, University of Central Florida
- R2. **Behzadan A.H.**, Kamat V.R. (2006), “PLOTSTROBE: Dynamic Excel Chart Plotter for the Stroboscope Simulation System”, CEE Technical Report No. 06-01, Department of Civil and Environmental Engineering, University of Michigan
- R3. **Behzadan A.H.**, Kamat V.R. (2005), “Visualization of Construction Activities in Outdoor Augmented Reality”, CEE Newsletter, Department of Civil and Environmental Engineering, University of Michigan

THESES AND DISSERTATIONS

- T1. **Behzadan A.H.** (2008), “ARVISCOPE: Georeferenced Visualization of Dynamic Construction Processes in Three-Dimensional Outdoor Augmented Reality”, Ph.D. Dissertation, Department of Civil and Environmental Engineering, University of Michigan
- T2. **Behzadan A.H.** (2005), “UM-AR-GPS-ROVER Augmented Reality Platform: Visualization of Construction Graphics in Outdoor Augmented Reality”, M.Eng. Thesis, CEE Technical Report No. 05-09, Department of Civil and Environmental Engineering, University of Michigan
- T3. **Behzadan A.H.** (2003), “Cementation Effects on Geotechnical Properties of Sandy Coarse Aggregate Soils”, B.Eng. Thesis, Department of Civil Engineering, Sharif University of Technology (In Farsi)

OTHER PUBLICATIONS

- O1. **Behzadan A.H.** (2012), “Educating the Millennial Student Generation: Challenges and Ways Forward”, Faculty Focus 11(2), Karen L. Smith Faculty Center for Teaching and Learning, University of Central Florida

INVITED SEMINARS

- S1. **Behzadan A.H.** (2013), “Knowledge-Based Simulation and Augmented Reality Visualization in Construction Design and Planning”, Keynote Presented at the VI Conference on Information Technology and Communication in Construction (TIC 2013), Universidade Estadual de Campinas (UNICAMP), Campinas, Brazil
- S2. Shirazi A., **Behzadan A.H.** (2013), “Augmented Reality Context-Aware Information Delivery Platforms for Engineering Education”, FIATECH Technology Conference and Showcase, San Antonio, TX
- S3. Akhavian R., **Behzadan A.H.** (2013), “Simulation And Visualization of Construction Fleet Operations Using Sensor-Based Process Data Mining”, IEEE Virtual Reality Conference, Florida Academic Virtual Reality Showcase (FLAVRS), Orlando, FL
- S4. Shirazi A., **Behzadan A.H.** (2013), “Integrating Augmented Reality Visual Simulation into Construction Planning, Design, and Training”, IEEE Virtual Reality Conference, Florida Academic Virtual Reality Showcase (FLAVRS), Orlando, FL
- S5. **Behzadan A.H.** (2013), “Data-Driven Simulation of Unstructured Construction Operations”, Computer-Integrated Construction Webinar Series, Department of Civil and Environmental Engineering, University of Michigan, Ann Arbor, MI
- S6. **Behzadan A.H.** (2012), “Emerging Research Areas in Construction Engineering: Augmented Reality Visualization and Real Time Process Data Collection”, Department of Civil, Environmental, and Construction Engineering, University of Central Florida, Orlando, FL
- S7. **Behzadan A.H.** (2011), “Build the World One Brick at a Time”, Association for Equipment Management Professionals (AEMP), Davenport, FL
- S8. **Behzadan A.H.** (2010), “Smart Construction: Innovative Solutions to Challenging Problems”, Chi-Epsilon Chapter, Department of Civil, Environmental, and Construction Engineering, University of Central Florida, Orlando, FL
- S9. **Behzadan A.H.** (2010), “Construction Engineering: Pushing the Boundaries of Science and Technology”, The Associated Builders and Contractors (ABC) Chapter, Department of Civil, Environmental, and Construction Engineering, University of Central Florida, Orlando, FL
- S10. **Behzadan A.H.** (2009), “ARVISCOPE: Georeferenced Visualization of Dynamic Construction Processes in 3D Outdoor Augmented Reality”, FIATECH Technology Conference and Showcase, Henderson, NV
- S11. **Behzadan A.H.** (2009), “ARVISCOPE: Interactive Augmented Reality Visualization for Effective Planning, Analysis, and Design of Construction and Other Engineering Operations”, Department of Civil Engineering, Division of Construction Engineering and Management, Purdue University, West Lafayette, IN
- S12. **Behzadan A.H.** (2009), “Interactive Augmented Reality Visualization and Positioning Technologies for Effective Planning, Design, Construction, and Maintenance of Civil

Infrastructure Systems”, Department of Civil, Environmental, and Construction Engineering, University of Central Florida, Orlando, FL

- S13. **Behzadan A.H.** (2008), “Unit Price Construction Contracts”, Department of Construction Management and Civil Engineering Technology, New York City College of Technology, City University of New York, New York, NY
- S14. **Behzadan A.H.** (2007), “ARVISCOPE: Design of an Augmented Reality Visualization Platform for Creating Smooth Interactive Animations of Simulated Construction Processes”, Department of Civil, Architectural, and Environmental Engineering, University of Texas, Austin, TX

POSTER AND ORAL PRESENTATIONS

- P1. Akhavian R., **Behzadan A.H.** (2013), “A Novel Approach for Automated Generation of Knowledge-Based Construction Simulation Models”, Construction Industry Institute (CII) Annual Conference, Orlando, FL
- P2. An J., Maherinia H., Nam B.H., **Behzadan A.H.** (2013), “Recycling of Asphalt Tear-Off Roofing Shingles in Hot Mix Asphalt”, TRB Committee ADC60 (Waste Management and Resource Efficiency in Transportation) Summer Workshop (Sustainable Best Management Practices in Transportation), Pittsburgh, PA
- P3. Akhavian R., **Behzadan A.H.** (2013), “Sensor-Based Equipment Operations Monitoring and Optimization to Support the Prospect of Environmental Friendly Construction”, Graduate Research Forum, University of Central Florida, Orlando, FL
- P4. Shirazi A., **Behzadan A.H.** (2013), “Enhancing Science, Technology, Engineering, and Math (STEM) Education Using an Augmented Reality Pedagogical Methodology”, Graduate Research Forum, University of Central Florida, Orlando, FL
- P5. Akhavian R., **Behzadan A.H.** (2012), “Construction Site Management Using Automated Field Data Collection, Simulation and Visualization”, Graduate Research Forum, University of Central Florida, Orlando, FL
- P6. Akhavian R., **Behzadan A.H.** (2011), “Dynamic Data Driven Simulation and Visualization of Construction Activities”, Graduate Research Forum, University of Central Florida, Orlando, FL
- P7. Toth M.S., Reinhart D.R., **Behzadan A.H.** (2011), “Use of Construction and Demolition Debris Inventory to Promote Recycling”, The Southeast Recycling Conference (SERC), Destin, FL
- P8. Rashidi A., Rashidi Nejad H., **Behzadan A.H.** (2009), “Multiple Linear Regression Approach for Productivity Estimation of Bulldozers”, Proceedings of the 3rd International Conference on Construction Engineering and Management and 6th International Conference on Construction Project Management (ICCEM&ICCPM), Jeju, South Korea
- P9. **Behzadan A.H.** (2008), “Application of 3D Augmented Reality for Excavation Damage Prevention”, ASCE Construction Research Council (CRC) Annual Convention, Chicago, IL

- P10. **Behzadan A.H.** (2008), “Design, Construction, and Maintenance of Urban Infrastructure Using Augmented Reality Visualization”, Civil and Environmental Engineering Research Symposium (CEERS), University of Michigan
- P11. **Behzadan A.H.**, Kamat V.R. (2007), “Creating Real Time Interactive Augmented Reality Animations of Construction Simulations”, Engineering Graduate Symposium, University of Michigan
- P12. **Behzadan A.H.** (2007), “Applications of Advanced 3D Visualization and Positioning Technologies in Construction Operations and Facility Management”, Department of Civil and Environmental Engineering, University of Michigan
- P13. Kamat V.R., Khoury H.M., **Behzadan A.H.** (2007), “A Ubiquitous WLAN and GPS Based User Tracking Framework for Contextual Information Support in Construction and Urban Disasters”, Poster Session, 2007 Construction Industry Institute (CII) Annual Conference, Orlando, FL
- P14. Awwad R.E., **Behzadan A.H.**, Tsimhoni O. (2006), “Comparative Analysis of Process Interaction and Activity Scanning in Simulation of Construction Operations”, Poster Session, 2006 Winter Simulation Conference, Monterey, CA
- P15. **Behzadan A.H.** (2006), “3D Visualization of Construction Processes in Outdoor Augmented Reality”, ASCE Construction Research Council (CRC) Annual Convention, Chicago, IL
- P16. **Behzadan A.H.**, Khoury H.M., Kamat V.R. (2006), “An Extensible Augmented Reality Framework for Visualization of Simulated Construction Processes”, Engineering Graduate Symposium, University of Michigan
- P17. Timm B.W., **Behzadan A.H.**, Kamat V.R. (2006), “Visualization of Construction Graphics in Outdoor Augmented Reality”, the 18th Annual Spring Research Symposium, Undergraduate Research Opportunity Program (UROP), University of Michigan
- P18. **Behzadan A.H.** (2006), “Numerical Inverse Kinematic Approach to Stable Animation (NIKASA) for Construction Graphics”, Department of Mechanical Engineering, University of Michigan
- P19. **Behzadan A.H.** (2006), “Augmented Reality Visualization of Simulated Construction Operations”, Department of Civil and Environmental Engineering, University of Michigan
- P20. **Behzadan A.H.**, Lee J. (2005), “Application of OpenSceneGraph in Simulation of Construction Graphics”, Department of Civil and Environmental Engineering, University of Michigan
- P21. **Behzadan A.H.** (2005), “Visualization of OpenGL Graphics in Outdoor Augmented Reality”, Department of Electrical Engineering and Computer Science, University of Michigan

INVENTIONS, PATENTS, AND TECHNOLOGY TRANSFERS

Augmented Reality Visualization System (File #4244)

Inventor on Record, Office of Technology Transfer, University of Michigan, 2008

Mobile Augmented Reality Backpack (File #4245)

Inventor on Record, Office of Technology Transfer, University of Michigan, 2008

CURRENT STUDENT SUPERVISION

PH.D. STUDENTS

- **Reza Akhavian**, Chair (expected graduation: Spring 2015)
Project: Knowledge-Based Construction Domain Specific Process-Level Simulation
- **Ruiko Maharjan**, Chair (expected graduation: Fall 2017)
Project: Simulation Modeling of Emission Generation and Dispersion in Heavy Construction Projects
- **Tung Khuc**, Committee Member (expected graduation: Spring 2014)
Project: Investigation of Computer Vision Based Methodologies for Structural Health Monitoring
- **Tarek Fahmy**, Committee Member (expected graduation: Spring 2014)
Project: Sustainability Assessment of a Municipal Utility Complex: A System of Systems Approach
- **Milad Hooshyar**, Committee Member (expected graduation: Summer 2014)
Project: Application of Agent-Based Modeling and Game Theory to the Management of Water Resources Problems with Multiple Stakeholders

MASTERS STUDENTS (THESIS OPTION)

- **Arezoo Shirazi**, Chair (expected graduation: Spring 2014)
Project: Context-Aware Mobile Augmented Reality Visualization in Engineering, Design, and Training

MASTERS STUDENTS (NON-THESIS OPTION)

- **Jeffrey Trimble** (expected graduation: Spring 2014)
- **Matthew Hodges** (expected graduation: Summer 2015)

UNDERGRADUATE STUDENTS

- **Brittany Cogger**, Research Advisor (expected graduation: Spring 2014)
Project: Review of Fuel and Energy Consumption Modeling Techniques for Heavy Construction Equipment

PAST STUDENT SUPERVISION

PH.D. STUDENTS

- **Murat Kucukvar**, Committee Member (graduated: Fall 2013)
Current Position: Post-Doctoral Fellow, University of Central Florida

Dissertation Title: Life-Cycle Sustainability Assessment Framework for the U.S. Built Environment

- **Mohamed Abdelraheem**, Committee Member (graduated: Spring 2011)
Current Position: Assistant Professor, Missouri Western State University
Dissertation Title: Electimize: A New Evolutionary Algorithm for Optimization with Applications in Construction Engineering

MASTERS STUDENTS (THESIS OPTION)

- **Zachary Behring**, Committee Member (graduated: Fall 2013)
Current Position:
Thesis Title: The Use of Recycled Concrete Aggregate in French Drain Applications
- **Hamid Maherinia**, Co-chair with Dr. Boohyun Nam (graduated: Spring 2013)
Current Position: Researcher, University of Central Florida
Thesis Title: Development of the Strategy to Select Optimum Reflective Cracking Mitigation Methods for the Hot-Mixed Asphalt Overlays in Florida
- **Reza Akhavian**, Chair (graduated: Summer 2012)
Current Position: Ph.D. Student, University of Central Florida
Thesis Title: A Framework for Process Data Collection, Analysis, and Visualization in Construction Projects
- **Michael S. Toth**, Co-chair with Dr. Debra Reinhart (graduated: Spring 2012)
Current Position: Ph.D. Student, University of Central Florida
Thesis Title: Construction and Demolition Debris Recovering and Recycling

MASTERS STUDENTS (NON-THESIS OPTION)

- **Joseph LoFaso** (graduated: Fall 2013)

UNDERGRADUATE STUDENTS

- **David Shine**, Research Co-advisor (graduated: Summer 2013)
Current Position: M.S. Student, University of Central Florida
Project: Laboratory Testing on Mechanical Properties of Tear-off Asphalt Roof Shingles
- **Mark L. Bacal**, Research Advisor (graduated: Fall 2010)
Current Position: Engineer, HNTB, Lake Mary, FL
Project: Visual Grading of Lumber Using MATLAB Programming

PROFESSIONAL SERVICE

COMMITTEE AND EDITORIAL BOARD

- Editorial Board, Assistant Specialty Editor (Quantitative Methods), Journal of Construction Engineering and Management, ASCE (2009 –)
- Member-at-Large, Visualization, Information Modeling, and Simulation (VIMS) Committee, ASCE (2013 –)

- Member, Construction Industry Institute (CII), Academic Committee (2010 –)
- Member, Award Committee, ASEE Southeastern Section (2013)
- Member, NOVA Award Committee, Construction Industry Forum (CIF) (2006 – 07)

CONFERENCE ORGANIZING AND COMMITTEE

- Technical Committee, Construction Research Congress (CRC), San Juan, Puerto Rico (2016)
- Best Paper Award Subcommittee, Visualization, Information Modeling, and Simulation (VIMS) Committee, 15th ASCE International Conference on Computing in Civil and Building Engineering (ICCCBE), Orlando, FL (2014)
- International Scientific Committee, 15th ASCE International Conference on Computing in Civil and Building Engineering (ICCCBE), Orlando, FL (2014)
- Technical Committee, Construction Research Congress (CRC), Quantitative Methods Track, Atlanta, GA (2014)
- Track Program Committee (TPC) Member and Session Chair (Data-Driven and Adaptive Construction Simulation and Visualization), Winter Simulation Conference (WSC), Washington, DC (2013)
- Scientific Committee, 13th International Conference on Construction Applications of Virtual Reality (CONVR), London, UK (2013)
- Chair, Best Paper Award Subcommittee, Visualization, Information Modeling, and Simulation (VIMS) Committee, ASCE Workshop on Computing in Civil Engineering, Clearwater, FL (2012)
- Scientific Committee, 12th International Conference on Construction Applications of Virtual Reality (CONVR), Taipei, Taiwan (2012)
- Technical Committee, ASCE Workshop on Computing in Civil Engineering, Clearwater, FL (2012)
- Technical Committee, Construction Research Congress (CRC), Construction Simulation, Visualization and Product Modeling Track, West Lafayette, IN (2012)
- Session Chair, Construction Modeling and Simulation, The 3rd International and 9th Construction Specialty Conference, Canadian Society of Civil Engineers (CSCE), Ottawa, Canada (2011)

PEER REVIEWER

- National Science Foundation (NSF) Proposal Review
 - Decision, Risk and Management Sciences Program, Division of Social and Economic Sciences, Directorate of Social, Behavioral and Economic Sciences (2012)
 - Civil Infrastructure Systems Program, Division of Civil, Mechanical and Manufacturing Innovation, Directorate of Engineering (2011 – 12)
- American Society of Civil Engineers (ASCE)
 - Journal of Construction Engineering and Management (2009 –)
 - Journal of Computing in Civil Engineering (2007 –)
 - Journal of Professional Issues in Engineering Education and Practice (2011 –)
 - Journal of Materials in Civil Engineering (2010 –)
- Elsevier Science
 - Journal of Advanced Engineering Informatics (2011 –)
 - Journal of Automation in Construction (2007 –)

- Journal of Accident Analysis and Prevention (2013 –)
- Journal of Knowledge-Based Systems (2011 –)
- Other Journals
 - International Journal of Robotics Research (2012 –)
 - Canadian Journal of Civil Engineering, National Research Council (NRC) (2011 –)
 - Journal of Information Technology in Construction (2010 –)
- Conference Proceedings
 - Construction Research Congress (CRC), San Juan, PR (2016)
 - 15th ASCE International Conference on Computing in Civil and Building Engineering (ICCCBE), Orlando, FL (2014)
 - Construction Research Congress (CRC), Atlanta, GA (2014)
 - Winter Simulation Conference (WSC), Washington, DC (2013)
 - 30th International Symposium on Automation and Robotics in Construction and Mining (ISARC), Montreal, Canada (2013)
 - 12th International Conference on Construction Applications of Virtual Reality (CONVR), Taipei, Taiwan (2012)
 - ASCE Workshop on Computing in Civil Engineering, Clearwater, FL (2012)
 - Construction Research Congress (CRC), Construction Simulation, Visualization and Product Modeling Track, West Lafayette, IN (2012)
 - 3rd International and 9th Construction Specialty Conference, Canadian Society of Civil Engineers (CSCE), Ottawa, Canada (2011)
 - 4th International Conference on Construction Engineering and Project Management (ICCEPM), Sydney, Australia (2011)
 - The World Multi-Conference on Systemics, Cybernetics and Informatics (WMSCI), Orlando, FL (2010 – 13)
 - ASEE Annual Conference and Exposition, American Society of Engineering Education (ASEE), Louisville, KY (2010)

UNIVERSITY SERVICE

COMMITTEE AND BOARD

- College of Engineering and Computer Science, University of Central Florida
 - Member, Scholarship and Awards Committee (2010 –)
 - Member, Space Committee (2012 –)
- Department of Civil, Environmental, and Construction Engineering, University of Central Florida
 - Chair, Lecturer Search Committee (2013)
 - Coordinator, MSCE Program Comprehensive Exam (2012 –)
 - Member, Graduate Committee (2012 –)
 - Member, Assessments Committee (2011 –)
 - Member, Faculty Search Committee (2010 – 11)
 - Member, Curriculum Committee (2009 – 10)

- Department of Construction Management and Civil Engineering Technology, New York City College of Technology, City University of New York
 - Member, Faculty Search Committee (2009)
- Department of Civil Engineering, Sharif University of Technology
 - President, Civil Students' Association, Sharif University of Technology, Iran (1999)

MENTORING AND OUTREACH

- College of Graduate Studies, University of Central Florida
 - Judge, Graduate Research Forum (2010)
- Department of Civil, Environmental, and Construction Engineering, University of Central Florida
 - Faculty Advisor, ASCE Student Chapter (2010 –)
 - FE Review Instructor (2010 – 11)
- College of Engineering, University of Michigan
 - Department Representative, Technical Day (A 1-day event for prospective engineering students) (2005 – 06)

PROFESSIONAL LICENSES AND CERTIFICATES

Practitioner and Faculty Advisor Training

American Society of Civil Engineers (ASCE), 2010

10-Hour Construction Safety Training Certificate

Occupational Safety and Health Administration (OSHA), 2009

Excellence in Civil Engineering Education (ExCEED)

American Society of Civil Engineers (ASCE), 2009

PROFESSIONAL MEMBERSHIPS AND ORGANIZATIONS

ASCE (American Society of Civil Engineers)

- Construction Research Council (CRC), 2011 –
- Technical Council on Computing and Information Technology (TCCIT)
 - Visualization, Information Modeling, and Simulation (VIMS) Committee, 2011 –
 - Data Sensing and Analysis (DSA) Committee, 2013 –
- Construction Engineering Education Committee, 2011 –
- Construction Institute (CI), 2000 –

CII (Construction Industry Institute)

- Academic Committee, 2010 –

ACI (American Concrete Institute), 2012 –

Chi Epsilon (The Civil Engineering Honor Society), 2011 –

Sigma Xi (The Scientific Research Society), 2010 –

ASEE (American Society of Engineering Education), 2010 –