

# Yiannis E. Papelis

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## Active Secret Clearance

### EDUCATION

- May 1993 Ph.D. Electrical & Computer Engineering, The University of Iowa, Iowa City, IA.  
Dec. 1989 M.S.E.E. Electrical & Computer Engineering, Purdue University, West Lafayette, IN.  
May 1988 B.S. Electrical Engineering (honors), CS minor, Southern Illinois University, Carbondale, IL.

### POSITIONS

#### Old Dominion University, 2007-present

#### Virginia Modeling Analysis & Simulation Center, 2007-present

2010-present Research Professor

2016-2020 (July-August), Research Fellow, Office of Naval Research, Naval Surface Warfare Center – Carderock Division

2010-2011 Chief Scientist

2007-2010 Research Associate Professor

Conduct applied interdisciplinary research focusing on human-centered immersive adaptive virtual environments focusing on human behavior modeling, and interactive teaching applications. Lead interdisciplinary teams of faculty, staff, students, industry, and military partners developing cutting edge simulations for education, medical and military training. Conduct research and development on unmanned systems, focusing on autonomy and human-machine interactions. Direct the Virtual Environments and Robotics Laboratory and manage research collaborations with industry, government and University collaborators. Seek funding and ensure successful completion of projects. Mentor junior faculty members, staff, and students.

#### College of Engineering, 2008-present

2018-present Adjunct Associate Professor, Electrical & Computer Engineering

2008-present Adjunct Associate Professor, Modeling Simulation & Visualization Engineering

Teach courses in simulation sciences and engineering. Design and deliver courses on autonomous robotics systems. Supervise senior undergraduate design projects. Mentor graduate and undergraduate student teams participating in international unmanned vehicle competitions. Define scope, identify equipment needs, and jointly oversee the Collaborative Unmanned Systems Laboratory.

#### University of Central Florida, 2006-2007

2006-2007 Visiting Assistant Professor, Department of Electrical Engineering and Computer Science

Faculty Affiliate, Institute of Simulation & Training

Faculty Affiliate, Center for Advanced Transportation System Simulation

Taught engineering courses and supervised senior design projects. Participated in UCF's team in the DARPA Urban Challenge autonomous vehicle competition with responsibility for the strategic and tactical autonomous driving behaviors. Team was one of 11 teams qualified for final round.

**The University of Iowa, 1989-2006**  
**National Advanced Driving Simulator & Simulation Center**

2002-2006 Chief Technical Officer

1998-2002 Branch Chief

Established strategic technical goals for Center. Responsible for interfacing to government and industry sponsors. Led proposal development efforts and subsequent project execution. Conducted research in transportation safety and in-vehicle technologies using operator-in-the-loop high-fidelity driving simulators. Directed engineering design and development activities and supervised 25 technical staff focused on developing hardware and software for testing driver-assist technologies, modeling driver behavior, hardware-in-the-loop component testing, scenario authoring within multi-agent complex software simulations and semi-autonomous driving behaviors used in human-machine interface experimentation. Oversaw development of prototypes and hardware-software for simulator-based and on-road data collections. Exercised technical and administrative oversight on major engineering updates to advanced motion control systems and image generators and simulator-related technologies.

**Center for Computer-Aided Design**

1993-1998 Technical Area Lead for Simulation

Authored proposals for projects involving design of systems that support driving safety research. Designed and integrated software leveraging parallel/distributed processing architectures to enable real-time execution of simulation codes. Developed software and firmware for scenario authoring systems focusing on autonomous driving behaviors and human behavior performance assessment. Designed software to facilitate data reduction and analysis tasks for large data sets used for post-experiment analysis. Designed and developed software for processing 3D databases and correlated terrain systems for engineering level of fidelity vehicle simulations and immersive virtual environments.

**College of Engineering and College of Science**

2000-2004 Adjunct Assistant Professor, Department of Computer Science

1994-1999 Adjunct Instructor, Department of Electrical & Computer Engineering

Taught courses in operating system architectures, engineering software, and embedded systems. Supervised students on thesis and independent study projects.

1989-1993 Graduate Research Assistant (under Scholarship), Center for Computer-Aided Design  
 Developed a real-time distributed framework for integration and synchronization of real-time concurrent modules executing on multiple hosts across a variety of operating systems (UNIX, VxWorks). Developed low level device drivers for VME-based peripherals (reflective memory, DR11-W) for integration in the framework.

1989-1990 Teaching Assistant (scholarship), Department of Electrical & Computer Engineering  
 Supervised laboratory sessions on digital hardware design.

**Purdue University, 1988-1989**

1988-1989 Research Assistant, Department of Electrical & Computer Engineering

Conducted research on mapping parallel programs to MIMD architectures through use of Petri-Nets. Developed authoring tools for specification and execution of Petri-Nets.

**Southern Illinois University, 1987-1988**

1987-1988 Student Worker & Research Assistant

Developed tools to support visualization and simulation of a Puma robot manipulator. Developed firmware for integrating vision algorithms into the control of robotic manipulators.

**TEACHING****Old Dominion University**

Fall 2018	MSIM 463/563, Design and Modeling of Autonomous Robotics Systems
Spring 2018	ECE 797, Master's Independent Study
Fall 2017	ENGN 110, Intro to Engineering
Spring 2016	MSIM 463/563, Design and Modeling of Autonomous Robotics Systems
Fall 2015	ENGN 110, Intro to Engineering, Dept. of MSVE
Spring 2015	MSIM 463/563, Design and Modeling of Autonomous Robotics Systems
Spring 2014	MSIM 495/595, Design and Modeling of Autonomous Robotics Systems
Fall 2011	MSIM 720/820, Continuous time systems simulation, online delivery
Fall 2010	MSIM 720/820, Continuous time systems simulation, online delivery
Fall 2009	MSIM 720/820, Continuous time systems simulation, online delivery
Fall 2008	MSIM 720/820, Continuous time systems simulation, online delivery

**University of Central Florida**

Fall 2007	EEL 4882, Engineering System Software, Dept. of EECS
Spring 2007	EEL 4851, Engineering Data Structures, Dept. of EECS
Spring 2007	EEL 4882, Engineering System Software, Dept. of EECS

**University of Iowa**

Fall 2004	22C:116, Advanced Operating Systems, Dept. of CS
Spring 2004	22C:116, Advanced Operating Systems, Dept. of CS
Fall 2003	22C:116, Advanced Operating Systems, Dept. of CS
Spring 2003	22C:116, Advanced Operating Systems, Dept. of CS
Spring 2000	55:033, Software Design, Dept. of ECE
Summer 2001	55:017, Computers in Engineering (embedded systems), Dept. of ECE
Spring 2001	55:017, Computers in Engineering (embedded systems), Dept. of ECE
Spring 1999	55:017, Computers in Engineering (embedded systems), Dept. of ECE
Fall 1997	55:017, Computers in Engineering (embedded systems), Dept. of ECE
Spring 1995	22C:32, Introduction to Systems Software, Dept. of ECE

**Short courses/Summer Camps**

2013-2018	Designer and Lead Instructor, "Advanced Robotics", Old Dominion University, VMASC. Week-long STEM-emphasis summer camp for high-school students involving building and programming custom-made ground robots with variety of on-board sensors.
2012-present	Designer and Lead Instructor, "Introduction to Robotics", Old Dominion University, VMASC. Week-long STEM-emphasis summer camp for middle-school students involving commercially-available robotics kits.
2014-2015	Designer and Lead Instructor, "Science, Math, Art, Robotics, Technology (SMART) Workshop", Integrated Systems Laboratory, National Center for Scientific Research "Demokritos", Athens, Greece. Adapted existing US "Introduction to Robotics" camp for Greek high-school level.

**DISSERTATION/THESIS COMMITTEES**

2020	Supervisor, Ph.D. Thesis, Ahmet Saglam, Old Dominion University, in progress
2018	Supervisor, Master's Project, Joe Lemanski, Old Dominion University, Electrical & Computer Engineering "RobotX Challenge: Perception Implementation using LIDAR," completed.

- 2017 Supervisor, Master's Project, Joseph Von Tersch, Old Dominion University, Electrical & Computer Engineering "Control System Design for WAM-V Vessel," completed.
- 2017 Supervisor, Master's Project, Ghassan Taha, Old Dominion University, Electrical & Computer Engineering "Microcontroller Interface for Controlling WAM-V Motors," completed.
- 2014 Member, Ph.D. Thesis committee, Wes Harden, Psychology, ODU, in progress.
- 2013 External Examiner, Ph.D. Thesis, Zhitao Xiong, University of Leeds, United Kingdom, Attended in person by special invitation (hosted visit), completed.
- 2012 Chair, M.S. Thesis, Katie Catlett, Old Dominion University, MSVE, "Using Eye and Head Movements as a Control Method for Tele-Operating a Ground Based Robot and its Payload", completed.
- 2011 Member, Ph.D. Thesis committee, Ric Roca, Biomedical Engineering, Old Dominion University, "Using 3D Stereoscopic Simulation to Repurpose the Occlusion Method for Visual-Search Skill Acquisition of Pitched Baseball Trajectories in the Batting Task," completed.
- 2008 Member, M.S. Thesis committee, Douglas Mielke, MSVE, Old Dominion University, "Using Agile Software Development Practices in a Research-Oriented Distributed Simulation," completed.
- 2007 Member, Ph.D. Thesis committee, Mike Robinson, MSVE, Old Dominion University, "Modeling Decision Making Related to Incident Delays During Hurricane Evacuations," completed.
- 2003 Co-Chair, M.S. Thesis committee, Bradley Bossard, University of Iowa, "Generation of Real-Time Synthetic Environments Using a Mobile Sensor Platform," completed.

#### **OTHER STUDENT SUPERVISION/MENTORSHIP**

- 2018 Supervisor, Mechanical Engineering Senior Design for a 9 student team focusing on mechanical design of components for unmanned surface vehicle.
- 2018 Supervisor, Electrical and Computer Engineering Senior Design for a 11 student team focusing on electrical design of components for unmanned surface vehicle.
- 2017 Supervisor, Mechanical Engineering Senior Design for a 15 student team focusing on mechanical and electrical design for unmanned surface vehicle.
- 2015 Faculty Mentor, Honors Research, The Governor's School for Science and Technology, Hampton, VA.
- 2009 Faculty Mentor, NASA Virtual Exploration Sustainability Challenge.
- 2007 Senior Design Project supervision, University of Central Florida, "Vehicle Data Logger".

#### **CONSULTANCIES**

- 2017-2018 International Society for Technology in Education (ISTE), Arlington, VA. Serve as subject-matter expert for new course development in artificial intelligence.
- 2017 RobotLAB, San Francisco, CA. Design robot-centered educational activities for teaching math and science concepts to high school students.
- 2016-present 8kSolutions, Titusville, FL. Design electronic hardware to support intelligent management of broadcast quality camera systems used by professional sports training teams.
- 2015-2016 Simis Inc., Portsmouth, VA. Design of semi-autonomous ground robots for use in live firing training, focusing on chassis design, user-robot interfaces & control algorithms.
- 2006-2016 Expert witness, focusing on efficacy of Electronic Stability Control in automotive accidents, retained for approximately 3 cases per year.

- 2015 Coleman Research, Raleigh, NC. Consulted on object recognition and tracking technology state-of-the-art and industry readiness.
- 2014-2015 National Center for Scientific Research Demokritos, Athens Greece. Research on unmanned aerial systems in marine surveillance applications.
- 2012-2015 Simis Inc., Portsmouth, VA. Engineering consulting on the design of autonomous surface vehicles with specific tasks to design microcontroller-based hardware for powerplant control, design and implement control algorithms for semi-autonomous guidance of unmanned systems.
- 2011-2013 National Center for Scientific Research Demokritos, Athens Greece. Research on modeling crowd behaviors with applications in airport security training.
- 2006-2009 Raydon Corporation, Daytona Beach, FL. Software architecture consultant.
- 2007 University of Central Florida, Orlando, FL. Support DARPA Urban Challenge competition, responsible for automated vehicle software design & coding, focusing on artificial intelligence use for guidance, navigation, and obstacle avoidance.
- 2006 Bergmann Associates, Rochester, NY. Design hardware interfaces to allow interactive viewing of 3D transportation simulations.
- 1993-1998 Intelnet, Inc., State College, PA. Designed a distributed network of RS-485 devices used for facility access control using biometrics. Designed application-specific micro-controller hardware for biometric capture and transmission through a network to back-end database implementing biometric recognition algorithms.

## CERTIFICATIONS

- 2017-present Insider Threat Awareness Training Certification, Center for Development of Security Excellence.
- 2007-present Social and Behavioral Research Certification, Collaborative Institutional Training Initiative (CITI PROGRAM), Old Dominion University.
- 2008-present Graduate Faculty Instruction, Old Dominion University.
- 2006 Professional Development: "The 7 Habits of Highly Effective People".
- 2004 Professional Development: "Speaking to the press", one day individualized training session; costs covered by Tier 1 automotive sub-system manufacturer and research sponsor in anticipation of press interviews and presentation of research results on the efficacy of Electronic Stability Control.
- 2002-2006 Institutional Review Board, Human Subjects Investigator, University of Iowa.
- 2000 Professional Development: "Using HLA for building distributed simulations."

## GRANTS & CONTRACTS AWARDED

### Old Dominion University

**Principal Investigator:** "Commonwealth Center of Innovation for Autonomous Systems", Grant from Commonwealth of Virginia, via Virginia Polytechnic University, \$600,000, 2019-2022.

**Principal Investigator:** "VR Enabled Learning System for Aviation Contextualized Knowledge and Skills", Newport News Aviation Academy, \$149,856, 2019-2020.

**Principal Investigator:** "Navigation System Modeling and Simulation," Space and Naval Warfare Systems Center, through WR Systems, \$250,000, 2017-2018.

**Principal Investigator:** "Optimized Unmanned Surface Vehicle Instrumentation," Simis Inc., \$50,454, 2017-2019.

**Co-Principal Investigator:** "A Model of Professional Development that Focuses on the Centrality of Teacher-Child Interactions in the Learning, Behavior, and School Readiness of Preschool Children with Disabilities or At-Risk for Disabilities," U. S. Department of Education, ED-Grants-041515-007,

CFDA 84.324, \$1,500,000, 2013-2014 (20% credit, focused on development of VR environments and avatar AI).

**Principal Investigator:** "Navigation System Modeling and Simulation," Space and Naval Warfare Systems Center, \$125,000, 2015-2016.

Co-Principal Investigator: "Virtual Operating Room, 2015-2016 Effort," ODU Funding from the National Center for Collaboration in Medical Modeling & Simulation, \$50,000, 2013-2014 (45% credit, focused on development of a virtual operating room simulation).

Co-Principal Investigator: "An Examination of Trust Exhibited by Members of Different Cultures toward Robotic Peacekeepers Wielding Nonlethal Weapons," \$793,341, Air Force Office of Scientific Research, 2015-2018 (10% credit, focus on scenario specification and virtual environment modeling and simulation).

**Principal Investigator:** "Navigation System Modeling and Simulation," Space and Naval Warfare Systems Center, \$160,000, 2014-2015.

**Principal Investigator:** "Development and Delivery of STEM Related In-School Youth Programs," Opportunity Inc., \$105,000, 2014-2015.

**Principal Investigator:** "Mapping experimental flight-test results using sub-scale aerial vehicles to full-scale operational environment of the NAS," NASA Headquarters, \$249,999 2014-2015.

Co-Principal Investigator: "NCCMMS Year 3 Funding (Virtual Operating Room)," ODU Funding from the National Center for Collaboration in Medical Modeling & Simulation, \$250,000, 2013-2014 (13% credit, focused on development of a virtual operating room simulation).

**Principal Investigator,** "Summer STEM Experience in Unmanned Aerial Vehicles," BOSH Global Services Inc., \$2,000, 2013.

**Principal Investigator:** "Development and Delivery of STEM Related In-School Youth Programs," Opportunity Inc., \$135,000 award, \$105,000 expenditures, 2013-2014.

**Principal Investigator:** "Navigation System Modeling and Simulation," WR Systems LTD (for US Navy's SPAWAR), \$301,999 award, \$205,100 expenditures, 2013-2014.

**Principal Investigator:** "Software Interface Work for Physical Therapy," Old Dominion University (internally funded), \$16,700, 2012.

**Principal Investigator,** "Development and Delivery of STEM Related In-School Youth Programs," Opportunity Inc., \$201,003 award, 165,560 expenditures, 2012-2013.

**Principal Investigator:** "Investigation of a Networked Validation Environment for Distributed Air/Ground NEXTGEN Concepts," National Institute of Aerospace (for NASA), \$65,788, 2012.

**Principal Investigator:** "Navigation System Modeling and Simulation," WR Systems LTD (for US Navy's SPAWAR), \$250,000, 2012-2013.

Co-Principal Investigator: "A Theoretically Driven Investigation of the Efficacy of an Immersive Interactive Avatar Rich Virtual Environment in Pre-Deployment Nursing Knowledge and Teamwork Skills Training," Army Medical Research and Materals Command, \$1,999,894, 2012-2013 (20% credit, focused on innovative approaches to medical scenario specifications and realistic virtual environment models for immersive training).

Co-Principal Investigator: "LIVES and Sim Lab: Laboratory for investigation, validation and verification of emerging simulators," \$50,000, 2012 (20% credit, focused on technology assessment of medical simulators).

Co-Principal Investigator: "Tunnel Vision," Tunnel Vision LLC., \$50,000, 2011 (30% credit, virtual environment modeling and transportation simulation integration).

**Principal Investigator:** "Research and Development to Increase Maturity of Concept, Operations, Procedures, and Technologies for Airborne Precision Spacing," Lockheed Martin (for NASA), \$678,852, 2010-2011.

Co-Principal Investigator: "Rift Valley Fever Modelinga and Analysis," Georgetown University Medical Center, \$78,000 award, \$103,000 expenditures, 2010-2011 (50% credit, collaborated on mathematical modeling of rift valley fever).

Co-Principal Investigator: "Visualization of Port Logistics; Phase II: Evaluation and Dissemination," Opportunity Inc. of Hampton Roads; \$22,000, 2009-2010 (20% credit, focused on web-media development for outreach).

Co-Principal Investigator: "Enhancing Education through Technology (E2T2): Leading-Edge, Media-Rich, Online Modeling, Simulations & Games," Hampton Roads Educational Telecommunications Association Inc., \$118,317, 2010-2011 (50% credit, focused on agent-based simulations, virtual environment synthesis design and creation).

Co-Principal Investigator: "Visualization of Port Logistics," Opportunity Inc. of Hampton Roads; \$94,270 award, \$100,000 expenditures, 2009-2010 (25% credit, focused on agent-based simulations and virtual environment creation).

Co-Principal Investigator: "JFCOM National Center for Small Unity Excellence (Crowd behaviors modeling)," NAVSUP Fleet Logistics Center Norfolk, \$626,214 award, \$232,000 expenditures, 2009-2010 (15% credit, focused on crowd modeling R&D).

**Principal Investigator:** "TDIB Research and Development Engineering Support Task (Crowd behaviors modeling)," NAVSUP Fleet Logistics Center Norfolk, \$136,789, 2009-2010.

**Principal Investigator:** "Research and Development of Airborn-Separation Assistance Systems and Concepts for Distributed Air Traffic Management," National Institute of Aerospace for NASA; \$20,000, 2008-2009.

**Principal Investigator:** "Technical Evaluation of Synthetic Texture Generation Algorithms, Phase II," Diamond Visionics LLC., as part of a Navy STTR, \$225,000, 2008-2009.

**Principal Investigator:** "AirPORTS: An agent-based end-to-end Class B Terminal Area operations Simulation Tool," National Institute of Aerospace (for NASA); \$210,338; 2008–2009.

**Principal Investigator:** "Support for Crowd Modeling Effort," Werner Anderson, Inc., \$50,000, 2008-2009.

**Principal Investigator:** "Battle Lab – Task 5.4 - Modeling Crowd Behaviors," NAVSUP Fleet Logistics Center Norfolk; \$132,776; 2008–2009.

**Principal Investigator:** "Technical Evaluation of Synthetic Texture Generation Algorithms," Diamond Visionics LLC., as part of a Navy STTR, \$30,000, 2007-2008.

### **University of Central Florida (\$354,160)**

Co-Principal Investigator: "Future Aviation Simulation System/Capability (FASS/C) Study," RDECOM-STC, \$204,160, 2006-2007.

Co-Principal Investigator: "Use of a Fully Instrumented Vehicle for Driving Simulator Validation," Florida Department of Transportation, \$150,000, 2007.

### **University of Iowa (\$16,736,786)**

Co-Principal Investigator: Industry/University Cooperative Research Center, "Instrumentation for Studying Young Driver Risk," National Science Foundation, \$150,000, 2005-2006.

**Principal Investigator:** "Driving Kiosk: Demonstrating Impairment Effects of Allergy Medications on Driving, Xperience Communications," \$182,179, 2004-2005.

**Principal Investigator:** "Driving Simulator Research and Design Consulting," MTS System Corporation, \$24,000 2004-2005.

**Principal Investigator:** Tread Separation Test, Tandy Engineering and Associates, \$36,000, 2005.

**Principal Investigator:** "Software Support for Developing a PC-Based Agricultural Equipment Driving Simulator," John Deere Company, \$109,297, 2004-2005.

Co-Principal Investigator: "Preparation for Older Driver Research Using the NADS," Modification #1, U.S. DOT National Highway Traffic Safety Administration, \$939,955, 2004-2005.

**Principal Investigator:** "Studying ESC Effectiveness and Driver's Reaction to ESC activation Under Realistic Driving Conditions," U.S. DOT National Highway Traffic Safety Administration, \$507,000, 2004-2005.

Co-Principal Investigator: "Driver Distraction, Wireless Voice Communication," U.S. DOT National Highway Traffic Safety Administration, \$325,967, 2004-2005.

**Principal Investigator:** "Washout Algorithm Development and Evaluation," U.S. DOT National Highway Traffic Safety Administration, \$49,804, 2004-2005.

**Principal Investigator:** "Assessment of Driver Distraction Relating to Wireless Voice Communication Device Interface Type," U.S. DOT National Highway Traffic Safety Administration, \$378,193, 2003-2004.

**Principal Investigator:** "Vehicle Dynamics Model Development on the NADS," U.S. DOT National Highway Traffic Safety Administration, \$57,184, 2003-2004.

**Principal Investigator:** "Assessment of Driver Distraction Relating to Wireless Voice Communications Devices: Conversation Content," U.S. DOT National Highway Traffic Safety Administration, \$813,986 2002-2004.

**Principal Investigator:** "Investigating Driver Reactions to In-Vehicle Driver Augmentation Systems Under Realistic Driving Conditions on a Driving Simulator," ESC coalition (Continental Teves, and Bosch), \$350,430, 2002-2004.

**Principal Investigator:** "Technical and Human Factors Support for the Development of a Simulator to Demonstrate Impaired Driving," IDC Simulation Systems, \$308,190, 2002-2004.

**Principal Investigator:** "Assessment of Driver Distraction Relating to Wireless Voice Communications Device Interface Type," Phase II, U.S. DOT National Highway Traffic Safety Administration, \$585,401, 2002-2003.

**Principal Investigator:** "NADS Low-Speed Cueing Validation," U.S. DOT National Highway Traffic Safety Administration, \$99,995, 2002-2003.

**Principal Investigator:** "Assessment of Driver Distraction Relating to Wireless Voice Communication Devices Interface Type," U.S. DOT National Highway Traffic Safety Administration, \$296,604, 2002-2005.

**Principal Investigator:** "Driving Simulation Project 1: Part I Factors & Testing and Driving Simulation Project 1: Part II", Visteon Corporation, \$342,000, 2002-2003.

Co-Principal Investigator: "The Influence of Various Levels of BAC on Driver Performance and Behavior Under Demanding Task, Situational and Environmental Conditions," U.S. DOT National Highway Traffic Safety Administration, \$2,950,000, 2002-2005.

**Principal Investigator:** "Upgrading the NADS Visual System," Internally funded project in conjunction with U.S. DOT Project on "The Influence of Various Levels of BAC on Driver Performance", \$500,000, 2002-2004.



**Co-Principal Investigator:** "Experiment to Investigate Driver/Vehicle Reaction to Tire Failure Scenarios," Task Order #2, U.S. DOT National Highway Traffic Safety Administration, \$288,710, 2001-2002.

**Principal Investigator:** "Investigating Driver Reaction to Tire Failure Scenarios," U.S. DOT National Highway Traffic Safety Administration, \$47,029, 2001.

**Principal Investigator:** "Operational Support for the National Advanced Driving Simulator," U.S. DOT National Highway Traffic Safety Administration, \$1,864,000, 2001-2003.

**Principal Investigator:** "Preparation for Driver Distraction Work: NADS Cooperative Project #9," U.S. DOT National Highway Traffic Safety Administration, \$99,995, 2000-2001.

**Principal Investigator:** "Advanced Simulator Networking for Vehicle and Equipment Distributed Product Design," National Science Foundation, \$300,000, 2000-2003.

**Principal Investigator:** "An Integrated Development Environment for PC-Based Dynamic Terrain Management and Simulation," Diamond Visionics L.L.C., \$140,000, 1999-2000.

**Principal Investigator:** "Semi-Autonomous Behaviors and Virtual Roadway Representation for the National Advanced Driving Simulator," TRW Inc., \$1,000,000 1997-1999.

**Principal Investigator:** "Extending FATRAN Capabilities for Off-Road Driving," Oerlikon Contraves AG, \$179,556, 1999-2000.

**Principal Investigator:** "Scenario Definition and Control Project," TRW Inc., \$382,568, 1999-2000.

**Principal Investigator:** "Extending FATRAN: Correlated Database Development and Trainee Evaluation," Oerlikon Contraves AG, \$251,708, 1998-2000.

**Co-Principal Investigator:** "Vehicle and Heavy Equipment Virtual Proving Ground Topic Area: Product Development Process," U.S. Army Tank & Automotive Command, \$997,000, 1998-2001.

**Co-Principal Investigator:** "Physical Simulation Laboratory Enhancement Phase II Upgrade, Modeling and Databases," U.S. Army Tank & Automotive Command, \$720,000, 1998-2000.

**Principal Investigator:** "Development of Specifications for the FASPA tank-driving simulator," Oerlikon Contraves AG, \$49,740 1998.

**Principal Investigator:** "NADS Contractor Support for Iowa Database Definition Software: NADS Cooperative Project Order #6," U.S. DOT National Highway Traffic Safety Administration, \$35,300 1997.

**Principal Investigator:** "Development of Scenes, Scenarios and Authoring Tools for the Advanced Driving and Maneuvering Simulator," Oerlikon Contraves AG., \$1,200,000, 1995-1999.

**Principal investigator:** "Support to National Advanced Driving Simulator Contractors for Evaluation of the Iowa Core Software: NADS Cooperative Project #4," U.S. DOT National Highway Traffic Safety Administration, \$174,995, 1994-1995.

**Co-Principal Investigator,** "Acquisition of Real-Time Simulation Host System for the Iowa Driving Simulator," National Science Foundation, \$197,837, 1994-1995.

## PUBLICATIONS

### PEER-REVIEWED JOURNAL PUBLICATIONS (17)

P. McNamara, K. H. Moore, Y. Papelis, S. Diallo, W. Wildman, "Virtual reality-enabled treatment of nightmares," *Dreaming*, 28(3), pp. 205-224.

Y. Papelis, R. Kady, L. Bair, E. Weisel, "Modeling of Human Behavior in Crowds Using a Cognitive Feedback Approach", *Simulation: Transactions of the Society for Modeling and Simulation International*, November 12, 2016, DOI: .10.1177/0037549716673153

Diallo S.Y., Padilla J., Papelis Y., Gore R., Lynch, C., "Content Analysis to Classify and Compare Live Virtual Constructive (LVC) Simulations and System of Systems (SoS)", *Journal of Defense Modeling and Simulation*, 1-14, DOI: . 10.1177/1548512915621972.

Kountouriotis, V., Thomopoulos, S.C.A., Papelis, Y., "An agent-based crowd behaviour model for real time crowd behaviour simulation", *Pattern Recognition Letters*, vol 44, July 2014, pp 30-38.

Romero, E.J., Watson, G.S., Papelis, Y. & Garcia, H. "Nursing pain assessment & management: A 3D interactive simulation. *International Journal of Designs for Learning*", 5(1), pp.43-56, 2014.

Romero, E.J., Watson, G.S. & Papelis, Y. "Using physiological measures to assess the effects of animated pedagogical agents in multimedia instruction", *Journal of Educational Multimedia and Hypermedia*, 23(4), 359-384. Chesapeake, VA: Association for the Advancement of Computing in Education (AACE), 2014.

T. Niu, H. Gaff, Y. Papelis, D. Hartley, "An Epidemiological Model of Rift Valley Fever with Spatial Dynamics", *Computational and Mathematical Methods in Medicine*, vol. 2012, Article ID 138757, 12 pages, 2012. doi:10.1155/2012/138757

H. Gaff, C. Burgess, J. Jackson, T. Niu, Y. Papelis, D. Hartley, "Mathematical Model to Assess the Relative Effectiveness of Rift Valley Fever Countermeasures", *International Journal of Artificial Life Research*, 2(2), 1-18, April-June 2011.

G. Watson, P. Katsioloudis, Y. Papelis, "A Simulation Architecture to promote Information Modeling, Planning, Scheduling and Decision-Making for Port Logistics within a Game Environment," *International Journal of Agile Manufacturing*, vol. 11 (2), 1-6, 2011.

Y. Papelis, G. Watson, T. Brown, "An empirical study of the effectiveness of electronic stability control system in reducing loss of vehicle control", *Accident Analysis and Prevention*, 42(3), 2010, 929-934. (Journal 5-year Impact Factor 2.717, 2011)

B. J. Patz, Y. Papelis, R. Pillat, G. Stein, D. Harper, "A Practical Approach to Robotic Design for the DARPA Urban Challenge," *Journal of Field Robotics*, 25(8), pp. 528-566, 2008.

G. Watson, Y. Papelis, O. Ahmad, "Design of Simulator Scenarios to Study the Effectiveness of Electronic Stability Control systems," *Transportation Research Record: Journal of the Transportation Research Board*, vol. 1980, ISSN 0361-1981, pp. 79-86, 2006.

P. Weidong, Y. Papelis, "Real-time dynamic simulation of vehicles with electronic stability control: Modeling and validation', *Int. J. of Vehicle Systems Modeling and Testing*, Vol 1, No 1/2/3, 2005, pp.143-167.

J. Cremer, J. Kearney, Y. Papelis, "Driving Simulation: Challenges for VR Technology," *VR Blackboard Column* (ed. L. Rosenblum), *IEEE Comp. Graphics Apl* 16(5), September 1996, pp. 16-20.

J. Cremer, J. Kearney, Y. Papelis, "HCSM: A Framework for Behavior and Scenario Control in Virtual Environments," *ACM Transactions on Modeling and Computer Simulation* 5(3), July 1995, pp. 242-267.

J. G. Kuhl, D. Evans, Y. Papelis, R. Romano, G. Watson, "The Iowa Driving Simulator: An Immersive Environment for Driving-Related Research and Development," *IEEE Computer* 28(7), July 1995, pp. 35-41.

Y. E. Papelis, T. L. Casavant, "Specification and Analysis of Parallel/Distributed Software and Systems by Petri Nets with Transition Enabling Functions," *Transactions on Software Engineering (TSE)* 18(3), March 1992, pp. 252-261.

#### NON-REFEREED PUBLICATIONS and BOOK CHAPTERS (4)

J. Bliss, Q. X. Hu, M. Itoh, S. Long, Y. Papelis, Y. Yamani, "Robot Peacekeepers: An Investigation of Cross-Cultural Trust", *Journal of Homeland Defense & Security Information Analysis Center*, v(6), #1, pp. 20-25, 2019.

M.A. Manore, Y. Papelis, "Roadway Visualization", in "Handbook of Driving Simulation for Engineering, Psychology and Medicine", D. L. Fisher, J. K. Caird, J. D. Lee, & M. Rizzo (Eds), Boca Raton, FL: CRC Press, 2011.

Y. Papelis, P. Madhavan, "Modeling Human Behavior", in "Modeling and Simulation Fundamentals: Theoretical underpinnings and Practical Domains", J. Sokolowski, C. Banks, eds., Hoboken: John Wiley and Sons, April, 2010.

G. Watson, Y. Papelis, "The Iowa Driving Simulator: Using Simulation for Human Performance Measurement," Emerging Technologies for Nutrition Research, Washington, DC, 1997, pp. 551-567.

J. Kuhl, Y. Papelis, R. Romano, "An Open Software Architecture for Operation-in-the-Loop Simulator Design and Integration," Concurrent Engineering: Tools and Technologies for Mechanical System Design" (E.J. Haug, ed.), Springer-Verlag, Heidelberg, 1993.

#### REFEREED GOVERNMENT REPORTS (2)

E. N. Mazzae, Y. Papelis, G. S. Watson, O. Ahmad, "The Effectiveness of ESC and Related Telltales: NADS Wet Pavement Study," Final Report, National Highway Traffic Safety Administration, DOT HS 809 978, December 2005.

T. A. Ranney, G.S. Watson, E.N. Mazzae, Y. Papelis, O. Ahmad, J.R. Wightman, "Examination of the Distraction Effects of Wireless Phone Interfaces Using the National Advanced Driving Simulator – Final Report on a Freeway Study," National Highway Traffic Safety Administration, DOT HS 809 737, April 2004.

#### REFEREED CONFERENCE PUBLICATIONS (60)

Y. Papelis, G. S. Watson, "Framework for authoring repeatable scenarios within virtual environments populated with stochastic virtual agents," Proceedings of the 19<sup>th</sup> ACM International Conference on Intelligent Virtual Agents, July 2-5, Paris, France (ACM), to appear.

Y. Papelis, M. Poteat, "Evaluating LTL Formulas for On-Board Unmanned Vehicle Health Monitoring," Proceedings of the 15<sup>th</sup> International Conference on Autonomous and Autonomous Systems (ICAS 2019), June 2-6, Athens, Greece, (IARIA), to appear.

Y. Papelis, G. S. Watson, "Using Event Templates to Accelerate Scenario Development in Virtual Training Environments," Proceedings of the 50<sup>th</sup> Summer Computer Simulation Conference, Bordeaux, France, July 9-12, 2018, p.16:1-16:11 (ACM).

T. Franklin, J. Crowe, I. Hobson, J. Winn., J. Zimmerman, Y. Papelis, M. Kotinis, "Simulation based optimization of a propulsion system for an unmanned surface vessel," Proceedings of the MODSIM World 2018 Conference, Norfolk, VA.

Y. Papelis, N. Sakioti, "Experimental Validation of a Ground Robot Simulation Model During Line Following Task", Proceedings of the MODSIM World 2017 Conference, Virginia Beach, VA.

M. Scerbo, L. Warvel, S. Zybak, R. Kennedy, A. Ashdown, K. Perry, E. Newlin-Canzone, Y. Papelis, M. Croll, H. Garcia, "Analysis of effective speech recognition in A Virtual Operating Room", Proceedings of the MODSIM World 2017 Conference, Virginia Beach, VA, to appear.

G. Watson, Y. Papelis, K. Hicks, "Simulation-Based Environment for the Eye-Tracking Control of Tele-Operated Mobile Robots", Proceedings of the Spring Simulation Conference, April 2016, Pasadena, CA (SCS).

J. Hanson, J. P. Bliss, J. W. Harden, Y. Papelis, "The Effects of Reliability and Criticality on an IED Interrogation Task", Proceedings of the Human Factors and Ergonomics Society Annual Meeting, September 2014, v58(1), 2340-2344.

Y. Papelis, B. Newman, K. Iftekharuddin, P. Quach, M. Ballin, "On the feasibility of using sub-scale aerial vehicles for testing full-scale NAS concepts", AUVSI Unmanned Systems Conference, May 4-7 2015, Atlanta GA (AUVSI).

K. Hicks, Y. Papelis, G. S. Watson, J. Bliss, J. Sokolowski, "Using Eye and Head Movements as a Control Mechanism for Tele-Operating a Ground Based Robot and its Payload", Proceedings of the 2015 Modeling, Simulation, and Visualization Student Capstone Conference. Suffolk, VA: Virginia Modeling Analysis and Simulation Center (VMASC).

Y. Papelis, G. S. Watson, K. Hicks, "Analyzing Eye-Tracking Effectiveness With and Without Cursor Feedback During On-Screen Button Presses", Proceedings of the MODSIM World 2015 Conference, Virginia Beach, VA.

Y. Papelis, J. Leathrum, R. Mielke, M. Croll, J. Caldwell, R. Greer, B. Labelle, "Modeling and Simulation of Inertial Navigation Systems with Automated Interface Checking and Post-Processing Support", MODSIM World 2014, Hampton, VA.

R. Kennedy, M. Scerbo, Y. Papelis, M. Croll, H. Garcia, "An Immersive Virtual Operating Room for Training Team Skills in Surgery", Demonstration within HFES session "Me and My VE, Part 3", Proceedings of the Human Factors and Ergonomics Society (HFES) 58<sup>th</sup> Annual Meeting, Oct 27-31 2014, Chicago, IL. DOI 10.1177/1541931214581499.

M. K., Mann, Y Liu-Thompkins, G.S. Watson, and Y. Papelis (2013), "A Multidisciplinary Examination of 3D Virtual Shopping Environments: Effects on Consumer Perceptual and Physiological Responses," Academy of Marketing Science 2013 Annual Conference, Monterey, CA.

Y. Papelis, M. Weate, "Operations architecture and vector field guidance for the Riverscout subscale unmanned surface vehicle" Defense and Homeland Security Simulation Conference, Athens, Greece, 2013.

Y. Papelis, "Designing a Simulation-Based Course in Autonomous Robotics for an M&S Curriculum", Proceedings of the Fourth International Forum on Systems and Mechatronics, Aug 6-9, 2012, Virginia Beach, VA.

Y. Papelis, C. H. Chen, A. Reckley, L. Cote, "Flexible Architecture for Small UAVs Supporting Mission Level Research", Proceedings of the Fourth International Forum on Systems and Mechatronics, Aug 6-9, 2012, Virginia Beach, VA.

G. S. Watson, Y. Papelis, A. Adcock, M. FehI-Seward, M. Taylor-Booth, "Design of interactive 3D environments for teaching physics-related concepts: Test case for projectile motion," Proceedings of the 2011 MODSIM World Conference, Oct 11-14, 2011, Virginia Beach, VA.

Y. Papelis, M. Croll, H. Garcia, B. Newman, A. Omran, S. Potter, C. Cramlich, J. Tynis, "Maturity Enhancements for Aircraft Simulation for Traffic Operations Research," AIAA Modeling and Simulation Technologies Conference, AIAA 2011-6374, 8-11 August 2011, Portland, Oregon.

Y. Papelis, G. Watson, P. Katsioloudis, P. Reed, "Development of a Container Handling Simulation for Demonstrating Port Careers", Spring Simulation Conference, Orlando, FL, 2010.

Y. Papelis, L. Bair, S. Manepalli, P. Madhavan, R. Kady, E. Weisel, "Modeling of Human Behavior in Crowds Using a Cognitive Feedback Approach", R.D. Peacock et al. (eds.), Pedestrian and Evacuation Dynamics, DOI 10.1007/978-1-4419-9725-8\_24, pp. 265-273, Springer Science+Business Media, 2011. Also, in 5<sup>th</sup> International Conference on Pedestrian and Evacuation Dynamics, March 8-10, National Institute of Standards and Technology, Gaithersburg, MD, 2010.

T. Gaumont, Y. Papelis, L.J. Bair, "Non-Lethal Effects and Crowd Behavior M&S Test-Bed", accepted for publication at the 2009 IITSEC Conference.

J. Wang, O. Unal, M. Cetin, Y. Shen, Y. Papelis, "Automatic High-Fidelity Roadway Generation", presented at the Capstone Conference, Norfolk, Virginia, April 2009.

- P. Madhavan, Y. Papelis, R. Kady, L. Moya, "An Agent-Based Model of Crowd Cognition", 18th Annual Behavioral Representation in Modeling & Simulation Conference, BRIMS 2009, Sundance, Utah, March 2009.
- B. Goldiez, Y. Papelis, R. Tarr, A. Salinas, "The Army's Future Aviation Simulation Strategy Study", Interservice/Industry Training, Simulation & Education Conference, paper 7108, Orlando, Florida, November 26-19, 2007.
- G. Watson, Y. Papelis, O. Ahmad, "Design of Simulator Scenarios to Study the Effectiveness of Electronic Stability Control Systems", Proceedings of the Annual Transportation Research Board Meeting, Washington, DC, 2006.
- Y. Papelis, "Determining Loss of Control as a Means of Assessing ESC Effectiveness in Simulator Experiments" Society of Automotive Engineers World Congress, Detroit, Michigan, April 3-6, 2006, accepted for publication.
- Y. Papelis, O. Ahmad, G. Watson, "Driving Simulation Scenario Definition Based on Performance Measures", Proceedings of the 3rd Driving Simulation Conference North America, Orlando, Florida, November 2005.
- Y. Papelis, M. Qidwai, C. Schwarz, J. Dolan, "Characterization of NADS Subsystem Transport Delays", Proceedings of the 3rd Driving Simulation Conference North America, Orlando, Florida, November 2005.
- Y. Papelis, "Performance Evaluation of a Framework for Distributed Real-Time Driving Simulation Applications Using Windows Based PCs," Proceedings of the 2nd Driving Simulation Conference North America (CD-ROM, ISSN 1546-5071), Dearborn, Michigan, October 8-10, 2003.
- W. Pan, Y. Papelis, Y. He, "A Vehicle-Terrain System Modeling and Simulation Approach to Mobility Analysis of Vehicles on Soft Terrain," Proceedings of SPIE Vol 5422, Unmanned Ground Vehicle Technology VI, G. Gerhart, C. Shoemaker, D. Gage, ed., pp.520-531, April 2004.
- Y. Papelis, O. Ahmad, G. Watson, "Developing Scenarios to Determine Effects of Driver Performance: Techniques for Authoring and Lessons Learned," Proceedings of the 2nd Driving Simulation Conference North America (CD-ROM, ISSN 1546-5071), Dearborn, Michigan, October 8-10, 2003.
- C. Schwarz, T. Gates, Y. Papelis, "Motion Characteristics of the National Advanced Driving Simulator," Proceedings of the 2nd Driving Simulation Conference North America (CD-ROM, ISSN 1546-5071), Dearborn, Michigan, October 8-10, 2003.
- Y. Papelis, O. Ahmad, H. German, "Adaptive Controllers for Vehicle Velocity Control for Microscopic Traffic Simulation Models," Proceedings of Ninth International Conference on Urban Transport and the Environment in the 21st Century (L.J. Sucharov and C.A. Brebbia, Eds.), Crete, Greece, March 10-12, 2003.
- G.W. Watson, Y. Papelis, L.D. Chen, "Transportation Safety Research Applications Utilizing High-Fidelity Driving Simulation," Proceedings of Ninth International Conference on Urban Transport and the Environment in the 21st Century (L.J. Sucharov and C.A. Brebbia, Eds.), Crete, Greece, March 10-12, 2003.
- Y. He, J. Cremer, Y. Papelis, "Real-Time Extendible-Resolution Display of On-line Dynamic Terrain," Proceedings of Graphics Interface 2002, Calgary, Alberta, Canada, May 27-29, 2002, pp. 151-160.
- S. Budzik, P. Nunez, Y. Papelis, D. Solis, "Dual Use Vehicle and Heavy Equipment Virtual Proving Grounds," Proceedings of the 2nd Annual Intelligent Vehicle Systems Symposium, Traverse City, MI, June 3-5, 2002.
- O. Ahmad, Y. Papelis, S. Bulusu, V. Gade, "Automatic Learning by Autonomous Driver Agents as Applied to Performing Realistic Lane Change Maneuvers," ISHF 2001, Sapporo, Japan, September 21-23, 2001, pp. 109-114.

Y. Papelis, B. Bossard, "Generation of Real-Time Synthetic Environments Using a Mobile Sensor Platform," 1st Human Centered Transportation Simulation Conference (CD-ROM, ISSN 1538-3288), Iowa City, Iowa, November 2001.

Y. Papelis, M. Schikore, G. Watson, "A Prototype Toolset for Rapidly Reducing and Reviewing Driving Simulator Data," 1st Human Centered Transportation Simulation Conference (CD-ROM, ISSN 1538-3288), Iowa City, Iowa, November 2001.

Y. Papelis, O. Ahmad, M. Schikore, "Scenario Definition and Control for the National Advanced Driving Simulator," Conference on Enhanced Safety of Vehicles, Amsterdam, Netherlands, 2001.

Y. Papelis, O. Ahmad, "A Comprehensive Microscopic Autonomous Driver Model for Use in High-Fidelity Driving Simulation Environments," Proceedings of the Annual Transportation Research Board Meeting, Washington, DC, 2001.

O. Ahmad, Y. Papelis, M. Schikore, G. Watson, "An Autonomous Driver Model for the Overtaking Maneuver for Use in Microscopic Traffic Simulation," Driving Simulation Conference, 2000, pp. 205-214.

M. Schikore, Y. Papelis, G. Watson, "Advanced Tools for Graphical Authoring of Dynamic Virtual Environments at the NADS," Driving Simulation Conference, 2000, pp. 215-224.

J. Cremer, Y. Papelis, Yefei He, "Dynamic Terrain for Real Time Driving Simulation," Proceedings of the IMAGE 2000 Conference, Scottsdale, Arizona, July 10-14, 2000.

Y. Papelis, T. Gates, "An Architecture for Distributed Virtual Proving Ground Applications," Proceedings of the IMAGE 2000 Conference, Scottsdale, Arizona, July 10-14, 2000.

G. Watson, Y. Papelis, M. Schikore, "A Multimedia Interactive Data Verification and Reduction Tool for Use in Driving Simulation Research," Proceedings of the IMAGE 2000 Conference, Scottsdale, Arizona, July 10-14, 2000.

Y. Papelis, S. Allen, B. Wherle, "Automatic Correlated Database Generation and Management for Ground Vehicle Simulators," AIAA Modeling and Simulation Technologies Conference and Exhibit, Portland, OR, Aug. 9-11, 1999.

E. Haug, J. Cremer, Y. Papelis, R. Ranganathan, D. Solis, "Virtual Proving Ground Simulation for Vehicle Design," in Proceedings of the 1998 ASME Design Automation Conference (CD-ROM), Atlanta, Georgia, September 13-16, 1998.

Y. Papelis, "Software Challenges for Low-Cost/High-Fidelity Driving Simulators," Third European Robotics, Intelligent Systems and Control Conference, Athens, Greece, June 22-25, 1998.

J. S. Freeman, G. Watson, Y. E. Papelis, A. Tayyab, R. A. Romano, J. G. Kuhl, "The Iowa Driving Simulator: An Implementation and Application Overview," SAE International Congress and Exposition, Detroit, Michigan, February 27-March 2, 1995, pp. 81-90.

D. V. McGehee, T. A. Dingus, Y. E. Papelis, M. J. Bartelme, "The Use of Specialized Scenes and Scenarios on the Iowa Driving Simulator for the Evaluation of Rear-End Crash Avoidance Performance," Transportation Research Board Meeting, Washington, DC, 1995.

Y. Papelis, S. Bahauddin, "Logical Modeling of Roadway Environments to Support Real-Time Simulation of Autonomous Traffic," First Workshop on Simulation and Interaction in Virtual Environments, Iowa City, Iowa, July 13-15, 1995, pp. 62-71.

Y. E. Papelis, "Terrain Modeling Issues for High Fidelity Ground Vehicle Simulators," Fifth Annual Conference on AI, Simulation and Planning in High Autonomy Systems, Gainesville, Florida, December 7-9, 1994, pp. 48-54.

J. Cremer, J. Kearney, Y. E. Papelis, R. A. Romano, "The Software Architecture for Scenario Control in the Iowa Driving Simulator," Proceedings of the Fourth Conference on Computer Generated Forces and Behavioral Representation, Orlando, Florida, May 4-6, 1994, pp. 373-381.

Y. E. Papelis, T. L. Casavant, J. G. Kuhl, "A Tool-Based Approach to the Design of Hard Real-Time Systems with Varying Temporal Characteristics," 1993 Dedicated Conference on Supercomputers for Automotive Applications in the International Symposium on Automotive Technology and Automation, Aachen, Germany, September 1993, pp. 213-220.

Y. E. Papelis, T. L. Casavant, "A Tool-Based Approach to the Design of Hard Real-Time Systems with Varying Temporal Characteristics," Workshop on Parallel and Distributed Real-Time Systems, Newport Beach, California, April 1993, pp. 171-175.

J. G. Kuhl, Y. E. Papelis, "A Software Architecture for Operator-in-the-Loop Simulator Design and Integration," Workshop on Parallel and Distributed Real-Time Systems, Newport Beach, California, April 1993, pp. 117-126.

J. G. Kuhl, Y. E. Papelis, R. A. Romano, "An Open Software Architecture for Operator-in-the-Loop Simulator Design and Integration," NATO Advanced Study Institute (ASI) on Concurrent Engineering Tools and Technology for Mechanical System Design, Iowa City, Iowa, May 25-June 5, 1992.

T. L. Casavant, J. A. Kohl, Y. E. Papelis, "Practical Use of Visualization for Parallel Systems," European Workshop on Parallel Computing (EWPC92), Barcelona, Spain, 1992.

Y. E. Papelis, T. L. Casavant, "XPAT: An Interactive Graphical Tool for Synthesis of Concurrent Software Using Petri Nets," International Conference on Parallel Processing (ICPP91), V2, August 1991, p. 292.

Y. E. Papelis, T. L. Casavant, "Mathematical Modeling of Petri-Nets for Development of Parallel/Distributed Programs," 14th Annual International Computer Software and Applications Conference (COMPSAC90), Chicago, Illinois, October 1990.

S. C. A. Thomopoulos, Y. E. Papelis, R. Tam, L. Nelson, D. Pougoulas, "Design of an Integrated Robot Design and Simulation System," First Hellenic Conference on Robotics and Automation, Athens, Greece, May 1988.

S. C. A. Thomopoulos, Y. E. Papelis, R. Tam, "IRODESS: Integrated Robot Design and Simulation System," IEEE Workshop on Computer-Aided Control System Design (CACSD89), Tampa, FL, December 1989, pp. 117-122.

## **INVITED WORKSHOPS & PRESENTATIONS**

### WORKSHOPS, TUTORIALS, PANELS (11)

Invited Judge, RobotX Maritime Unmanned Boat Challenge 5-day international competition, Office of Naval Research, Honolulu, HI, December 2016.

Invited Judge, RoboBoat Maritime Unmanned Boat Challenge 1-day US competition, Office of Naval Research, Virginia Beach, VA, July 2016.

Invited Panelist, "Role of the Academic Community in the Cyber Security and UMS Industry", The Commonwealth of Virginia Cyber Security – Unmanned Systems Technology Showcase, Sept 30-Oct 1, Chester VA, 2015.

Invited Panelist, "The Role of Modeling and Simulation in the Integration of Unmanned Aerial Systems into the National Airspace", 2014 MODSIM World Conference and Expo, Hampton, VA, 2014.

Invited Tutorial, "Human Behavior Modeling", 2011 MODSIM World Conference and Expo, Virginia Beach, VA, 2011

Invited Tutorial, "Enhancing Computer and Human Interaction: Modeling Human Behavior in Realistic Environments". 2<sup>nd</sup> Annual Modeling & Simulation Summit, Orlando, FL.

Invited subject matter expert on Manned/Unmanned Systems Interoperability session, Hampton Roads Sensors and Unmanned Systems Technology Cluster Partnership Workshop on Port Security, Portsmouth, VA, Jan 25-26, 2010.

Invited Presenter and Chair of Discussion Panel, "Virtual Centers of Excellence Workshop", NASA Sponsored workshop, NASA Langley Research Center, Hampton, VA, April 30-May 1, 2009.

Instructor, 4-day course, Continuous Systems Simulation, delivered to Navy Command Operational Test and Evaluation Force, Norfolk, VA, 2008.

Invited Organizer and Presenter, "Driving Simulation Scenario Comparability Based on Performance Measures", Transportation Research Board sponsored full-day workshop #143, Washington, DC, January 22, 2006.

Invited Speaker, "Driving Simulation Technology Challenges for Supporting Transportation Research", Full Day Workshop for the Midwest Transportation Consortium, Ames, IA, January 2, 2003.

#### INVITED PRESENTATIONS (18)

"UAS Work at Old Dominion University", Education and Workforce Development Summit, Governor's Unmanned Systems Commission, Blacksburg VA, March 14-15, 2016.

"Novel Research Potpourri", Ideas Festival 2016, Booz Allen Hamilton, Norfolk VA, March 5, 2016

"Architecture of the Riverscout sub-scale unmanned surface vehicle", Institute for Transport Studies, Safety and Technology Group External Seminar Series, University of Leeds, Leeds, UK. Oct 22, 2013.

"Recent Advances in Psychology-based Crowd Modeling", National Center of Scientific Research Demokritos Summer School 2009, Athens, Greece, July 2009.

"Applications of Artificial Intelligence and Virtual Reality: What is in the future?", NASA Langley Research Center, Hampton, VA, March 19, 2009.

"Modeling Crowds", Lockheed Martin/ODU/VMASC technical exchange, Norfolk, VA, April 7, 2009.

"Recent Advances in Crowd Modeling", presented at Urban Operations Modeling & Simulation Summit IX, Suffolk, VA, April 21-23, 2009.

"Cognitive and Physical Modeling of Crowds", presented at the ODU Computer Science Dept. colloquium, Feb 27, 2009.

"Autonomous vehicle competitions focused on off-road navigation and obstacle avoidance", ODU Dept. of Electrical & Computer Engineering, Graduate Seminar, February 8, 2008.

"National Advanced Driving Simulation Research", presented to the Iowa Dept. Of Economic Development Board of Directors, Iowa City, IA, September 19, 2002.

"Overview of Driving Simulation Research at Iowa", presented at the Obermann Faculty Research Seminar, Obermann Center for Advanced Studies, Iowa City, IA, June 20, 2000.

"Automatic Generation of Virtual Proving Ground Databases Using High Resolution GPS", Critical Technologies for Modeling and Simulation of Ground Vehicles, Automotive Research Center Conference, Ann Arbor, MI, May 24, 2000.

"Virtual Proving Ground Modeling", Critical Technologies for Modeling and Simulation of Ground Vehicles, Automotive Research Center Conference, Ann Arbor, MI, May 26, 1999.

"Modeling Roadway Surfaces For Real-Time Simulation", Critical Technologies for Modeling and Simulation of Ground Vehicles, Automotive Research Center Conference, Ann Arbor, MI, June 4, 1997.



“Use of Lead Vehicle Behaviors for the Study of Following Patterns in a Simulated Driving Environment,” Presented at the Driving Simulation Conference, Lyons, France, September 1997.

“A General Purpose HCSM Controller for Arbitrary Intersection Topologies,” Workshop on Scenario and Traffic Generation in Driving Simulation, Orlando, Florida, December 1996.

“Ambient Traffic Generation Around a Moving Focus Point in Virtual Driving Environments”, Workshop on Scenario and Traffic Generation in Driving Simulation, Orlando, Florida, December 1996.

“Graphical Authoring of Complex Scenarios Using High Level Coordinators,” Workshop on Scenario and Traffic Generation in Driving Simulation, Orlando, Florida, December 1996.

## HONORS, AWARDS & PRIZES

- 2015 Best Paper Award, Gaming and Virtual Reality Track-- Hicks, Kathryn, Papelis, Yiannis E., Watson, Ginger S., Bliss, James, ; Sokolowski, J. (2015, April 16). Using eye and head movement as a control mechanism for tele-operating a ground-based robot and its payload. Proceedings of the 2015 Modeling, Simulation, and Visualization Student Capstone Conference. Suffolk, VA: Virginia Modeling Analysis and Simulation Center (VMASC)
- 1989-1992 Graduate Engineering Dean’s Scholarship, University of Iowa. Scholarship covered tuition, fees, books and supplies
- 1985-1988 Dean’s List, Southern Illinois University
- 1987-1988 International Student’s Scholarship, Southern Illinois University (2 semesters)

## PROFESSIONAL SERVICE

Society for Computer Modeling & Simulation (SCS)

- 2017-2018 Chairman of the Board  
 2016-present Vice President for Publications  
 2013-2014 Vice President for Publications

Transportation Research Board (TRB)

- 2005-2011 Member, Transportation Research Board (TRB) Committee on Visualization in Transportation (ABJ95)
- 2003-2007 Member, Transportation Research Board (TRB) Committee on Simulation & Measurement of Vehicle & Operator Performance (AND30)
- 2004-2005 Member, Transportation Research Board (TRB) Visualization in Transportation, Task Force (ABJ95T)

IMAGE Society

- 2002-2005 IMAGE Society Ground Vehicle Simulation Special Interest Group

Driving Simulation Conference (DSC)

- 2001-2007 Member, Steering Committee, Driving Simulation Conference-North America
- 2004-2007 Member, Steering Committee, Driving Simulation Conference-Asia
- 2001 Chair, First Human Centered Transportation Simulation (DSC-NA)

## SCHOLARLY SERVICE

- 2013-present Associate Editor, Simulation: Transactions of the Society for Modeling and Simulation International

2013-present	Proposal reviewer: Jeffress Trust Program in Interdisciplinary Research, The Medical Foundation
2009-present	Reviewer, Journal of Computing in Higher Education
2009-present	Reviewer, Journal of Accident Analysis & Prevention
2016	Reviewer, Simulation Modelling Practice and Theory
2015	Book proposal reviewer, Wiley Publications
2009-present	Reviewer, Advances in Engineering Software
2009-2013	Reviewer, SIMULATION: Transactions of the Society for Modeling and Simulation International
2002-2010	Reviewer, Transportation Research Board, various sub-committees

### **UNIVERSITY SERVICE**

2017	Chair for faculty grievance proceedings, Old Dominion University.
2013-present	Member of Senate Committee G, Faculty Status and Remuneration, Old Dominion University
2011-present	Member of the Graduate Committee of the MSVE Department, College of Engineering, Old Dominion University
2016	Member, University Committee on Drone Policy, Old Dominion University
2015	Member, University Committee on Non-tenure track faculty advancement, Old Dominion University
2011, 2012	Chair, Hiring Committee for faculty research search in medical simulation area, Old Dominion University
2010	Chair, Hiring Committee for project scientist search, Old Dominion University
2005-2007	Representative, University of Iowa Staff Council
2007	Chair, Staff Council committee on diversity, University of Iowa
2007	Member, Diversity Action Committee, University of Iowa
1993-2007	Chair, Hiring committees for research and projects scientists, and research assistants, University of Iowa.

### **MEMBERSHIP IN PROFESSIONAL SOCIETIES**

Member, Society of Computer Modeling and Simulation International (SCS)  
 Senior Member, Institute of Electrical and Electronics Engineers (IEEE)