# JOSEPH J. LAVIOLA JR.
# Curriculum Vitae

University of Central Florida
Department of Electrical Engineering and Computer Science
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## RESEARCH INTERESTS

User interfaces, interactive 2D and 3D graphics, human robot interaction, pattern recognition

## EDUCATION

**2005:** **Ph.D.**, Computer Science, Brown University
Dissertation: "Mathematical Sketching: A New Approach to Creating and Exploring Dynamic Illustrations"
Advisor: Andries van Dam

**2001:** **Sc.M.**, Applied Mathematics, Brown University

**2000:** **Sc.M**., Computer Science, Brown University
Thesis: "Whole-Hand and Speech Input in Virtual Environments"

**1996:** **B.S**., Computer Science, Florida Atlantic University

## PROFESSIONAL EXPERIENCE

**2012-Present:** CAE Link Professor and Associate Professor with Tenure in EECS, University of Central Florida, Orlando, FL

**2008-Present:** Affiliated Research Faculty, Institute for Simulation and Training, University of Central Florida, Orlando, FL

**2013-Present:** Adjunct Associate Professor of Computer Science, Brown University, Providence, RI

**2005-Present:** Co-founder and VP of Business Strategy, Fluidity Software, Inc., Somerville, MA

**2000-Present:** Consultant, JJL Interface Consultants, Inc., Oviedo, FL

*Consulting services for user interface design and patent litigation.*
*My consultancies include Nextron Medical Technologies, Physion, Inc., Bellissima Cosmetics, Rosebud LMS, Inc., McKinsey and Co., Microsoft Research, Sixense Entertainment, Inc. (Advisory Board Member), SNR Denton, Williams & Connolly LLP*

**2006-2013:** Adjunct Assistant Professor of Computer Science (Research), Brown University, Providence, RI

**2010-2012:** SAIC Faculty Fellow and Assistant Professor in EECS, University of Central Florida, Orlando, FL

**2007-2010:** Assistant Professor, University of Central Florida, Orlando, FL

**2006-2009:** Research Faculty, Microsoft Center for Research on Pen-Centric Computing, Providence, RI

**2005-2006:** Postdoctoral Research Associate, Brown University, Providence, RI

*Continuing work in mathematical sketching as well as exploring how different orientation tracking algorithms work in augmented reality environments.*

**1998-2005:** Research Assistant**,** Brown University Computer Graphics Lab, Providence, RI

*Developed mathematical sketching, an approach to making dynamic illustrations through the combination of handwritten mathematics and free-form drawings and created a mathematical expression recognition system. Studied how different factors such as motion style, sampling rate, prediction time, and noise variance affected various prediction algorithms for human motion tracking in virtual environments. Explored how multimodal interfaces could be used in virtual environments as well as the general topic of improving 3D interfaces in virtual environments. Assisted in the startup and development of the Brown University Technology Center for Advanced Scientific Computing and Visualization.*

**1999:** Teaching Assistant, Brown University, CS-295-5, Interdisciplinary Scientific Visualization

*Maintained course web page, prepared class notes, graded homework.*

**1997:** Research Scientist, Fraunhofer Center for Research in Computer Graphics, Providence, RI

*Developed demonstration applications for a table-based virtual environment display system utilizing 2D and 3D gesture-based interface techniques.*

**1996:** Software Technician, UCS, Inc., Fort Lauderdale, FL

*Performed software test automation and software quality assurance.*

**1995:** Student Intern, IBM, Boca Raton FL

*Maintained SQL database query system and performed website development tasks.*

## HONORS AND AWARDS

**2013:** UCF Teaching Incentive Program Award (TIP)

**2013:** UCF Scholarship of Teaching and Learning Award (SOTL)

**2013:** UCF College of Engineering and Computer Science Deans Research Professorship Award

**2013:** UCF College of Engineering and Computer Science Excellence in Graduate Teaching Award

**2012:** Appointed the CAE Link Professor in Electrical Engineering and Computer Science at UCF

**2012:** UCF Research Incentive Award (RIA)

**2012:** Named IEEE Senior Member

**2011:** Best Paper Award, 8th International Conference on Advances in Computer Entertainment Technology

**2011:** Named ACM Senior Member

**2011:** Best Poster Award, Eurographics/ACM Symposium on Sketch-Based Interfaces and Modeling

**2011:** Named to the Eurographics Sketch-Based Interfaces and Modeling steering committee

**2010:** Appointed the SAIC Faculty Fellow in Electrical Engineering and Computer Science at UCF

**2010:** CHI 2010 Honorable Mention Paper (top 5% of all paper submissions)

**2010:** UCF College of Engineering and Computer Science Distinguished Researcher Award

**2009:** Best Paper Award, Eurographics/ACM Symposium on Sketch-Based Interfaces and Modeling

**2009:** National Science Foundation CAREER Award

**2008:** Best Paper Award, 9th International Symposium on Smart Graphics

**2007:** UCF Presidential Major Equipment Award

**2006:** Best Paper Award, Eurographics Workshop on Sketch-Based Interfaces and Modeling

**2004:** Best Paper Presentation (Applied Estimation Session), 2004 American Control Conference

**2000-2002, 2004:** The van Dam Fellowship

**1998:** IBM Cooperative Fellowship

**1996:** FAU's Aaron Finerman Award

**1996:** FAU's Faculty Award for Outstanding Undergraduate Achievement

**1995:** Microsoft Senior Achievement Award

Also elected to Sigma Xi (1998), Phi Kappa Phi (1995), and Phi Eta Sigma (1993)

## RESEARCH CONTACTS AND GRANTS

**Total Funding: $2,772,031**
**Total as PI: $2,640,031**
**Total as Co-PI: $132,000**
**My Share at UCF: $2,329,207**

### Active Grants and Contracts

"Physics Based Multi-Touch Movement Interface Creation for 3D Modeling and Simulation, Phase II", JHT Incorporated Award JHT13S0002 (Navy SBIR Phase II, Topic N121-061), $75,000, Sole PI (100% credit), Oct. 2013 – Sept. 2015.

"Physics Based Multi-Touch Movement Interface Creation for 3D Modeling and Simulation, Phase II", UCF/I-4 Match, $75,000, Sole PI (100% credit), Aug. 2013 – Sept. 2015.

"Healthcare Informatics, Implementation, Long Term Care and Aging", James A. Haley Veterans' Hospital, $26,661, Sole PI (100% credit), April 2013 – Mar. 2014.

"SHF: Large: A Working Set Approach to Integrated Development Environments", NSF Award CCF-1012056, Sole PI (100% credit) on Subcontract from Brown University, $179,823 of $1,123,918, Aug. 2010 – July 2014.

"Major: Enhancing Creativity and Authoring in STEM Education-Based Virtual Worlds through Concept-Oriented Design", NSF Award IIS-0856045, $755,845, PI (70% credit), July 2009 – June 2014.

"REU Supplement to Major: Enhancing Creativity and Authoring in STEM Education-Based Virtual Worlds through Concept-Oriented Design", NSF Award IIS-0856045, $40,000, Sole PI (100% credit), July 2010 – June 2014.

"CAREER: Mathematical Sketching: Pen-based Tools for Conceptual Understanding in Mathematics and Physics", NSF CAREER Award IIS-0845921, $459,776, Sole PI (100% credit), May 2009 – April 2015.

"REU Supplement to CAREER: Mathematical Sketching: Pen-based Tools for Conceptual Understanding in Mathematics and Physics", NSF CAREER Award IIS-0845921, $80,000, Sole PI (100% credit), May 2009 – April 2015.

### Past Grants and Contracts

"Feasibility for the Development of a Physics, Navigation, and Meta Gestures API for Training, Simulations, and Entertainment", JHT Incorporated Award JHT12S0003 (Navy SBIR Phase I, Topic N121-061), $42,100, Sole PI (100% credit), June 2012 – Dec. 2013.

"Feasibility for the Development of a Physics, Navigation, and Meta Gestures API for Training, Simulations, and Entertainment", UCF/I-4 Match, $14,033, Sole PI (100% credit), July 2012 – Dec. 2013.

"Extending Smart Home Technology for Cognitively Impaired Veterans to Delay Institutionalization (Part II)", James A. Haley Veterans' Hospital, $33,000, Sole PI (100% credit), April 2013 – Sept. 2013.

"Naturalistic Operator Interface for Immersive Environments", Design Interactive, Inc. Award EGO6389UCF (DoD OSD SBIR Phase I), $49,700, PI (50% credit), March 2013 – Aug. 2013.

"Naturalistic Operator Interface for Immersive Environments", UCF/I-4 Match, $16,666, PI (50% credit), March 2013 – Aug. 2013.

"Robot Platforms for Research and Education in Human Robot Interaction", UCF Major Research Equipment Award, $54,200, PI (50% credit), Feb. 2013 – June 2013.

"Dynamic 3D Stereo Visualization of Physics Concepts through a Hybrid Stylus Interface", Infinite Z, $10,000, PI (100% credit), Dec. 2012 – Aug. 2013.

"VR and Gaming Project Exploration", James A. Haley Veterans' Hospital Award VA673C10812, $40,000, PI (100% credit), Sept. 2011 – Jan. 2013.

"Personalized Self-Efficacy Virtual Environment Recovery Experience (PERSEVERE)", Intelligent Automation, Inc. Award 9762 (NIH SBIR Phase I, Topic 141), $15,889, PI (100% credit), Aug. 2012 – Jan. 2013.

"Realistic Full Body Interfaces for Locomotion and Communication in 3D Virtual Environments", US Army RDECOM Award W91CRB-10-C-0212, $175,000, PI (100% credit), Sept. 2010 – Dec. 2012.

"Prototyping Tools for Unobtrusive Mood Assessment", RDECOM-STC Award W91CRB-09-C-0504, $150,000, PI (100% credit), May 2009 – Sept. 2011.

"Deep Green Program Support", Science Applications International Corporation Award 4400157271, $67,229, Sole PI (100% credit), June 2008 – June 2009.

"Deep Green Program Support", UCF/I-4 Match, $33,614, Sole PI (100% credit), July 2008 – June 2009.

"Interaction and the Analyst Workstation of the Future", US Air Force Research Lab Award FA87500820202, $70,000, Sole PI (100% credit), June 2008 – June 2009.

"Sketching Mathematical Algorithms", US Air Force Research Lab A-SpaceX Award FA8750-08-C-0131, Sole PI (100% credit) on Subcontract from Brown University, $53,078 of $250,000, Feb. 2008 – Feb. 2009.

"Pre-Visualization of Content Creation and User Experience for Free-Choice Learning Venues", UCF Presidential Major Equipment Award, $47,574, PI (50% credit), Dec. 2007 – Nov. 2008.

"Sketching Mathematical Algorithms", Disruptive Technology Office A-SpaceX Award N61339-06-C-0186, Sole PI (100% credit) on Subcontract from Brown University, $75,943 of $350,000, Sept. 2006 – Dec. 2007.

"Adaptive Real-Time Learning for Mathematical Expression Recognition in Mathematical Sketching", NSF STTR Phase I Award OII-0611012, $132,000, Co-PI (23% credit), PI: Donald P. Carney, July 2006 – June 2007.

## PUBLICATIONS

**Total Citations (according to Google Scholar): 3750**
**h-index: 25**

### Book and Book Chapters

#### In Print

Williamson, B., Wingrave, C., and LaViola, J. "Full Body Locomotion with Video Game Motion Controllers". *Human Walking in Virtual Environments*, F. Steinicke, Y. Visell, J. Campos, and A. Lecuyer (eds.), Springer, 351-376, May 2013.

LaViola, J. "Mathematical Sketching: An Approach to Making Dynamic Illustrations". *Sketch-based Interfaces and Modeling*, J. Jorge and F. Samavati (eds.), Springer Verlag London Limited, 81-118, December 2010.

LaViola, J. "Input Devices", *Wiley Encyclopedia of Computer Science and Engineering*, B. Wah (ed.), Wiley, Vol.3, 1575-1584, January 2009.

LaViola, J., Prabhat, Forsberg, A., Laidlaw, D., and van Dam, A. "Virtual Reality-Based Interactive Scientific Visualization Environments". *Trends in Interactive Visualization: State-of-the-Art Survey*, E. Zudilova-Seinstra, T. Adriaansen, and R. van Liere (eds.), Springer Verlag London Limited, 225-250, January 2009.

Bowman, D., Kruijff, E., LaViola, J., and Poupyrev, I. *3D User Interfaces: Theory and Practice*, Addison Wesley, July 2004. (cited 1022 times, source: Google Scholar)

### Edited Books

#### In Print

LaViola, J., Pan, Z., Coquillart, S., and Schmalstieg, D. (eds.) *IEEE Virtual Reality 2013*, IEEE Press, March 2013.

Billinghurst, M., LaViola, J., and Lecuyer, A. (eds.) *IEEE Symposium on 3D User Interfaces 2012*, IEEE Press, March 2012.

LaViola, J., Hachet, M., and Billinghurst, M. (eds.) *IEEE Symposium on 3D User Interfaces 2011*, IEEE Press, March 2011.

Hachet, M., Kiyokawa, K., and LaViola, J. (eds.) *IEEE Symposium on 3D User Interfaces 2010*, IEEE Press, March 2010.

Grimm C. and LaViola J. (eds.). *ACM SIGGRAPH/Eurographics Symposium Proceedings: Sketch-Based Interfaces and Modeling 2009*, ACM Press, August 2009.

**Refereed Journals and Periodicals**

**In Print**

LaViola, J., "3D Gestural Interaction: The State of the Field," *ISRN Artificial Intelligence*, Vol. 2013, Article ID 514641, 18 pages, 2013.

Gupta, P., Lobo, N., and LaViola, J. "Markerless Tracking and Gesture Recognition using Polar Correlation of Camera Optical Flow", *Machine Vision and Applications*, 24(3):651-666, April 2013.

Ellis, C., Masood, Z., Tappen, M., LaViola, J., and Sukthankar, R. "Exploring the Trade-off Between Accuracy and Observational Latency in Action Recognition", *International Journal of Computer Vision*, 101(3):420-436, February 2013.

Cheema, S., Hoffman, M., and LaViola, J. "3D Gesture Classification With Linear Acceleration and Angular Velocity Sensing Devices for Video Games", *Entertainment Computing*, 4(1):11-24, February 2013.

Tomlinson, B., Patterson, D., Pan, Y., Blevis, B., Nardi, B. Silberman, S., Norton, J., and LaViola, J. "What If Sustainability Doesn't Work Out?", *Interactions*, 19(6):50-55, November/December 2012.

Varcholik, P., LaViola, J., and Hughes, C. "Establishing a Baseline for Text Entry for a Multi-Touch Virtual Keyboard", *International Journal of Human-Computer Studies*, 70(10):657-672, October 2012.

Cashion, J., Wingrave, C., and LaViola, J. "Dense and Dynamic 3D Selection for Game-based Virtual Environments", *IEEE Transactions on Visualization and Computer Graphics (Proceedings of Virtual Reality 2012)*, 18(4):634-642, April 2012.

Miller, A., White. B., Charbonneau, E., Kanzler, Z., and LaViola, J. "Interactive 3D Model Acquisition and Tracking of Building Block Structures", *IEEE Transactions on Visualization and Computer Graphics (Proceedings of Virtual Reality 2012)*, 18(4):651-659, April 2012.

Xiong, Y. and LaViola, J. "A ShortStraw-Based Algorithm for Corner Finding in Sketch-Based Interfaces", *Computers and Graphics*, 34(5):513-527, October 2010.

Wingrave, C. and LaViola, J. "Reflection on the Design and Implementation of Virtual Environments", *PRESENCE: Teleoperators and Virtual Environments*, 19(2):179-195, April 2010.

Wingrave, C., Williamson, B. , Varcholik, P., Rose, J., Miller, A., Charbonneau, E., Bott, J. and LaViola, J. "Wii Remote and Beyond: Using Spatially Convenient Devices for 3DUIs", *IEEE Computer Graphics and Applications*, 30(2):71-85, March/April 2010.

Wingrave, C., LaViola, J. and Bowman, D. "A Natural, Tiered and Executable UIDL for 3D User Interfaces Based on Concept-Oriented Design", *ACM Transactions on Computer-Human Interaction (TOCHI)*, 16(4):Article 21 (36 pages), November 2009.

Zeleznik, R., Miller, T., van Dam, A., Li, C., Tenneson, D., Maloney, C., and LaViola, J. "Applications and Issues in Pen-Centric Computing", *IEEE Multimedia*, 15(4):14-21, October-December 2008.

LaViola, J. "Bringing VR and Spatial 3D Interaction to the Masses through Video Games", *IEEE Computer Graphics and Applications*, 28(5):10-15, September/October 2008.

LaViola, J., and Zeleznik, R. "A Practical Approach to Writer-Dependent Symbol Recognition Using a Writer-Independent Recognizer", *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 29(11):1917-1926, November 2007.

LaViola, J. "An Initial Evaluation of MathPad$^2$: A Tool for Creating Dynamic Mathematical Illustrations", *Computers and Graphics*, 31(4):540-553, August 2007.

Julier, S., and LaViola, J. "On Kalman Filtering with Nonlinear Equality Constraints", *IEEE Transactions on Signal Processing*, 55(6):2774-2784, June 2007. (cited 132 times, source: Google Scholar)

LaViola, J. "Advances in Mathematical Sketching: Moving Toward the Paradigm's Full Potential", *IEEE Computer Graphics and Applications*, 27(1):38-48, January/February 2007.

Katzourin, M., Ignatoff, D., Quirk, L., LaViola, J., and Jenkins, O. "SwordPlay: Innovating Game Development through VR", *IEEE Computer Graphics and Applications*, 26(6):15-19, November/December 2006.

LaViola, J. and Zeleznik, R. "MathPad$^2$: A System for the Creation and Exploration of Mathematical Sketches", *ACM Transactions on Graphics (Proceedings of SIGGRAPH 2004)*, 23(3):432-440, August 2004. (cited 168 times, source: Google Scholar)

Bowman, D., Kruijff, E., LaViola, J., and Poupyrev, I. "An Introduction to 3-D User Interface Design", *PRESENCE: Teleoperators and Virtual Environments*, 10(1):96-108, February 2001. (cited 256 times, source: Google Scholar)

Van Dam, A., Forsberg, A. Laidlaw, D., LaViola, J., and Simpson, R. "Immersive VR for Scientific Visualization: A Progress Report", *IEEE Computer Graphics and Applications*, 20(6):26-52, November/December 2000. (cited 190 times, source: Google Scholar)

LaViola, J. "A Discussion of Cybersickness in Virtual Environments", *SIGCHI Bulletin* 32(1):47-56, January 2000. (cited 108 times, source: Google Scholar)

Forsberg, A., LaViola, J., Markosian, L., and Zeleznik, R. "Seamless Interaction in Virtual Reality", *IEEE Computer Graphics and Applications*, 17(6):6-9, November/December 1997.

**Refereed Conferences and Workshops**

**<u>In Print</u>**

Buchanan, S., Floyd, B., Holderness, W., and LaViola, J. "Towards User-Defined Multi-Touch Gestures for 3D Objects", *Proceedings of the 2013 ACM International Conference on Interactive Tabletops and Surfaces (ITS 2013)*, 231-240, October 2013.

Kulshreshth, A. and LaViola, J. “Evaluating Performance Benefits of Head Tracking in Modern Video Games”, *Proceedings of the ACM Symposium on Spatial User Interaction (SUI 2013)*, 53-60, July 2013.

Kang, B., Bott, J., and LaViola, J. “User Perceptions of Drawing Logic Diagrams with Pen-Centric User Interfaces”, *Proceedings of Graphics Interface 2013*, 79-86, May 2013.

Zorn, C., Wingrave, C., Charbonneau, E., and LaViola, J. “Exploring Minecraft as a Conduit for Increasing Interest in Programming”, *Proceedings of the International Conference on the Foundations of Digital Games 2013 (FDG 2013)*, 352-359, May 2013.

Schild. J., Bölicke, L., LaViola J., and Masuch, M. “Creating and Analyzing Stereoscopic 3D Game Interfaces”, *Proceedings of the 2013 ACM Annual Conference on Human Factors in Computing Systems (CHI 2013)*, 169-178, April 2013.

Cashion, J., Wingrave, C., and LaViola, J. “Optimal 3D Selection Technique Assignment Using Real-Time Contextual Analysis”, *Proceedings of the IEEE Symposium on 3D User Interfaces 2013*, 107-110, March 2013.

Kulshreshth, A., Zorn, C., and LaViola, J. “Real-time Markerless Kinect based Finger Tracking and Hand Gesture Recognition for HCI”, *Proceedings of the IEEE Symposium on 3D User Interfaces 2013*, 187-188, March 2013.

Cashion, J., Wingrave, C., and LaViola, J. “Automatic 3D Selection Technique Assignment Using Real-time Scenario Analysis”, *Proceedings of IEEE Virtual Reality 2013*, 103-104, March 2013.

Pfeil, K., Koh, S., and LaViola, J. “Exploring 3D Gesture Metaphors for Interaction with Unmanned Aerial Vehicles” *Proceedings of the 2013 ACM International Conference on Intelligent User Interfaces*, 257-266, March 2013.

Williamson, B., LaViola, J., Roberts, T., and Garrity, P. “Multi-Kinect Tracking for Dismounted Soldier Training”, *Proceedings of the Interservice/Industry Training, Simulation, and Education Conference (I/ITSEC) 2012*, 1727-1735, December 2012.

Reiss, S., Bott, J., and LaViola, J. “Code Bubbles: A Practical Working-Set Programming Environment”, *Proceedings of the 34th International Conference on Software Engineering (ICSE 2012)*, 1411-1414, June 2012.

Cossairt, T. and LaViola, J. “SetPad: A Sketch-Based Tool For Exploring Discrete Math Set Problems”, *Proceedings of the Ninth Eurographics/ACM Symposium on Sketch-Based Interfaces and Modeling 2012*, 47-56, June 2012.

Kulshreshth, A., Schild, J., and LaViola, J. “Evaluating User Performance in 3D Stereo and Motion Enabled Video Games”, *Proceedings of the International Conference on the Foundations of Digital Games 2012*, 33-40, May 2012.

Schild, J., LaViola, J., and Masuch, M. “Understanding User Experience in Stereoscopic 3D Games”, *Proceedings of the 2012 ACM Annual Conference on Human Factors in Computing Systems (CHI 2012)*, 89-98, May 2012.

Cheema, S., Gulwani, S., and LaViola, J. "QuickDraw: Improving Drawing Experience for Geometric Diagrams", *Proceedings of the 2012 ACM Annual Conference on Human Factors in Computing Systems (CHI 2012)*, 1037-1046, May 2012.

Wingrave, C., Norton, J., Ross, C., Ochoa, N., Veazanchin, S., Charbonneau, E., and LaViola, J. "Inspiring Creative Constructivist Play", *Proceedings of the 2012 ACM Annual Conference on Human Factors in Computing Systems Extended Abstracts (CHI EA 2012)*, Work-In-Progress, 2339-2344, May 2012.

Buchanan, S., Ochs, B., and LaViola, J. "CSTutor: A Pen-Based Tutor for Data Structure Visualization", *Proceedings of the 43rd Technical Symposium on Computer Science Education (SIGCSE 2012)*, 565-570, February 2012.

Cheema, S. and LaViola, J. "PhysicsBook: A Sketch-Based Interface for Animating Physics Diagrams", *Proceedings of the 2012 International Conference on Intelligent User Interfaces*, 51-60, February 2012.

Kang, B. and LaViola, J. "LogicPad: A Pen-Based Application for Visualization and Verification of Boolean Algebra", *Proceedings of the 2012 International Conference on Intelligent User Interfaces*, 265-268, February 2012.

Williamson, B., Wingrave, C., LaViola, J., Roberts, T., and Garrity, P. "Natural Full Body Interaction for Navigation in Dismounted Soldier Training", *Proceedings of the Interservice/Industry Training, Simulation, and Education Conference (I/ITSEC) 2011*, 2103-2110, December 2011.

Ellis, C., Masood, Z., Tappen, M., LaViola, J., and Sukthankar, R. "Measuring and Reducing Observational Latency when Recognizing Actions", *Proceedings of the 6th IEEE Workshop on Human Computer Interaction: Real-Time Vision Aspects of Natural User Interfaces*, 422-429, November 2011.

Charbonneau, E., Miller, A., and LaViola, J. "Teach Me to Dance: Exploring Player Experience and Performance in Full Body Dance Games", *Proceedings of the Eighth International Conference on Advances in Computer Entertainment Technology (ACE 2011)*, Article 43 (8 pages), November 2011. (Best Paper Award)

Bott, J., Gabriele, D., and LaViola, J. "Now or Later: An Initial Exploration into User Perception of Mathematical Expression Recognition Feedback ", *Proceedings of the Eighth Eurographics/ACM Symposium on Sketch-Based Interfaces and Modeling 2011*, 125-132, August 2011.

Cheema, S. and LaViola, J. "Wizard of Wii : Toward Understanding Player Experience in First Person Games with 3D Gestures", *Proceedings of the Sixth International Conference on the Foundations of Digital Games 2011*, 265-267, June 2011.

Litwiller, T. and LaViola, J. "Evaluating the Benefits of 3D Stereo in Modern Video Games", *Proceedings of the 2011 Annual Conference on Human Factors in Computing Systems (CHI 2011)*, 2345-2354, May 2011.

Charbonneau, E., Hughes, C., and LaViola, J. "Vibraudio Pose: An Investigation of Non-Visual Feedback Roles for Body Controlled Video Games", *Proceedings of Sandbox 2010: The Fifth ACM SIGGRAPH Symposium on Video Games*, 79-84, July 2010.

Cheema, S. and LaViola, J. "Applying Mathematical Sketching to Sketch-Based Physics Tutoring Software", *Lecture Notes in Computer Science 6133, 10th International Symposium on Smart Graphics (SG 2010)*, 13-24, June 2010.

Norton, J., Wingrave, C., and LaViola, J. "Exploring Strategies and Guidelines for Developing Full Body Video Game Interfaces", *Proceedings of the Fifth International Conference on the Foundations of Digital Games 2010*, 155-162, June 2010.

Bott, J. and LaViola, J. "A Pen-Based Tool for Visualizing Vector Mathematics", *Proceedings of the Seventh Eurographics/ACM Symposium on Sketch-Based Interfaces and Modeling 2010*, 103-110, June 2010.

Bragdon, A., Reiss, S., Zeleznik, R., Karumuri, S., Cheung, W., Kaplan, J., Coleman, C., Adeputra, F., and LaViola, J. "Code Bubbles: Rethinking the User Interface Paradigm of Integrated Development Environments", *Proceedings of the ACM/IEEE 32nd International Conference on Software Engineering (ICSE 2010)*, 455-464, Volume 1, May 2010.

Bragdon, A., Reiss, S., Zeleznik, R., Karumuri, S., Cheung, W., Kaplan, J., Coleman, C., Adeputra, F., and LaViola, J. "A Research Demonstration of Code Bubbles", *Proceedings of the ACM/IEEE 32nd International Conference on Software Engineering (ICSE 2010)*, 293-296, Volume 2, May 2010.

Bragdon, A., Reiss, S., Zeleznik, R., Karumuri, S., Cheung, W., Kaplan, J., Coleman, C., Adeputra, F., and LaViola, J. "Code Bubbles: A Working Set-based Interface for Code Understanding and Maintenance", *Proceedings of the 28th International Conference on Human Factors in Computing Systems (CHI 2010)*, 2503-2512, April 2010. (CHI 2010 Honorable Mention Paper)

Wingrave, C., Rose, J., Langston, T., and LaViola, J. "Early Explorations of CAT: Canine Amusement and Training", *Proceedings of the 28th International Conference Extended Abstracts on Human Factors in Computing Systems (CHI EA 2010)*, 2661-2669, April 2010.

Hoffman, M., Varcholik, P., and LaViola, J. "Breaking the Status Quo: Improving 3D Gesture Recognition with Spatially Convenient Input Devices", *Proceedings of IEEE Virtual Reality 2010*, 59-66, March 2010.

Chertoff, D., Goldiez, B., and LaViola, J. "Virtual Experience Test: A Virtual Environment Evaluation Questionnaire", *Proceedings of IEEE Virtual Reality 2010*, 103-110, March 2010.

Gupta, P., da Vitoria Lobo, N., and LaViola, J. "Markerless Tracking Using Polar Correlation of Camera Optical Flow", *Proceedings of IEEE Virtual Reality 2010*, 223-226, March 2010.

Williamson, B., and Wingrave, C., and LaViola, J. "RealNav: Exploring Natural User Interfaces for Locomotion in Video Games", *Proceedings of the IEEE Symposium on 3D User Interfaces 2010*, 3-10, March 2010.

Miller, A. and LaViola, J. "Towards a Handheld Stereo Projector System for Viewing and Interacting in Virtual Worlds", *Proceedings of the IEEE Symposium on 3D User Interfaces 2010*, 133-134, March 2010.

Cheema, S. and LaViola J. "Towards Intelligent Motion Inferencing in Mathematical Sketching", *Proceedings of the 2010 International Conference on Intelligent User Interfaces*, 289-292, February 2010.

Leal, A., Wingrave, C., and LaViola, J. "Initial Explorations into the User Experience of 3D File Browsing", *Proceedings of HCI 2009*, 339-344, September 2009.

Varcholik, P., LaViola, J., and Hughes, C. "The Bespoke 3DUI XNA Framework: A Low-Cost Platform for Prototyping 3D Spatial Interfaces in Video Games", *Proceedings of Sandbox 2009: The Fourth ACM SIGGRAPH Symposium on Video Games*, 55-62. August 2009.

Charbonneau, E., Miller, A., Wingrave, C., and LaViola, J. "Understanding Visual Interfaces for the Next Generation of Dance-Based Rhythm Video Games", *Proceedings of Sandbox 2009: The Fourth ACM SIGGRAPH Symposium on Video Games*, 119-126. August 2009.

Xiong, Y. and LaViola, J. "Revisiting ShortStraw – Improving Corner Finding in Sketch-Based Interfaces", *Proceedings of the Sixth Eurographics/ACM Symposium on Sketch-Based Interfaces and Modeling 2009*, 101-108, August 2009. (Best Paper Award)

O'Connell, T., Li, C., Miller, T., Zeleznik, R., and LaViola, J. "A Usability Evaluation of AlgoSketch: A Pen-Based Application for Mathematics", *Proceedings of the Sixth Eurographics/ACM Symposium on Sketch-Based Interfaces and Modeling 2009*, 149-158, August 2009.

Marinkas, D., Zeleznik, R., and LaViola, J. "Shadow Buttons: Exposing WIMP-Functionality While Preserving the Inking Surface in Sketch-Based Interfaces", *Proceedings of the Sixth Eurographics/ACM Symposium on Sketch-Based Interfaces and Modeling 2009*, 159-164, August 2009.

Varcholik, P., LaViola, J., and Nicholson, D. "TACTUS: A Hardware and Software Testbed for Research in Multi-Touch Interaction", *Lecture Notes in Computer Science 5611, 13th International Conference on Human Computer Interaction, HCI International 2009*, 523-532, July 2009.

Bott, J., Crowley, J., and LaViola, J. "Exploring 3D Gestural Interfaces for Music Creation in Video Games", *Proceedings of The Fourth International Conference on the Foundations of Digital Games 2009*, 18-25, April 2009.

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Charbonneau, E., Miller, A., Wingrave, C., and LaViola, J. "RealDance: An Exploration of 3D Spatial Interfaces for Dancing Games", *Proceedings of the IEEE Symposium on 3D User Interfaces 2009*, 141-142, March 2009.

Bott, J., Crowley, J., and LaViola, J. "One Man Band: A 3D Gestural Interface for Collaborative Music Creation", *Proceedings of IEEE VR 2009*, 273-274, March 2009.

Li, C., Zeleznik, R., Miller, T., and LaViola, J. "Online Recognition of Handwritten Mathematical Expressions with Support for Matrices", *Proceedings of the 19th International Conference on Pattern Recognition (ICPR 2008)*, December 2008.

Zeleznik, R., Miller, T., Li, C., and LaViola, J. "MathPaper: Mathematical Sketching with Fluid Support for Interactive Computation", *Lecture Notes in Computer Science 5166, 8th International Symposium on Smart Graphics (SG 2008)*, 20-32, August 2008. (Best Paper Award)

Forsberg, A., Bragdon, A., LaViola, J., Raghupathy, S., and Zeleznik, R. "An Empirical Study in Pen-Centric User Interfaces: Diagramming", *Proceedings of the Eurographics Workshop on Sketch-Based Interfaces and Modeling 2008*, 135-142, June 2008.

Li, C., Miller, T., Zeleznik, R., and LaViola, J. "AlgoSketch: Algorithm Sketching and Interactive Computation", *Proceedings of the Eurographics Workshop on Sketch-Based Interfaces and Modeling 2008*, 175-182, June 2008.

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LaViola, J. and Katzourin, M. "An Exploration of Non-Isomorphic 3D Rotation in Surround Screen Virtual Environments", *Proceedings of the IEEE Symposium on 3D User Interfaces 2007*, 49-54, March 2007.

Lemmerman, D. and LaViola, J. "Effects of Interaction-Display Offset on User Performance in Surround Screen Virtual Environments", *Proceedings of IEEE Virtual Reality 2007*, 303-304, March 2007.

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Julier, S. and LaViola, J. "An Empirical Study into the Robustness of Split Covariance Addition (SCA) for Human Motion Tracking", *Proceedings of the 2004 American Control Conference, IEEE Press*, 2190-2195, June 2004.

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Zeleznik, R., LaViola, J., Acevedo, D., and Keefe, D. “Pop Through Button Devices for VE Navigation and Interaction”, *Proceedings of IEEE Virtual Reality 2002*, 127-134, March 2002.

LaViola, J., Zeleznik, R., Acevedo, D., and Keefe, D. “Hands-Free Multi-Scale Navigation in Virtual Environments”, *Proceedings of the 2001 Symposium on Interactive 3D Graphics*, 9-15, March 2001. (cited 132 times, source: Google Scholar)

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LaViola, J. “MSVT: A Virtual Reality-Based Multimodal Scientific Visualization Tool”, *Proceedings of the Third IASTED International Conference on Computer Graphics and Imaging*, 1-7, November 2000.

LaViola, J. and Zeleznik, R. “Flex and Pinch: A Case Study of Whole Hand Input Design for Virtual Environment Interaction”, *Proceedings of the Second IASTED International Conference on Computer Graphics and Imaging*, 221-225, October 1999.

LaViola, J. “A Multimodal Interface Framework For Using Hand Gestures and Speech in Virtual Environment Applications”, *Lecture Notes in Artificial Intelligence #1739, Gesture-Based Communication in Human-Computer Interaction*, 303-314, March 1999.

LaViola, J., Holden, L., Forsberg, A., Bhuphaibool, D., and Zeleznik, R. “Collaborative Conceptual Modeling Using the SKETCH Framework”, *Proceedings of the First IASTED International Conference on Computer Graphics and Imaging*, 154-158, June 1998.

Forsberg, A., LaViola, J., and Zeleznik, R. “ErgoDesk: A Framework for Two- and Three-Dimensional Interaction at the ActiveDesk”, *Proceedings of the Second International Immersive Projection Technology Workshop*, Ames, Iowa, May 11-12, 1998.

LaViola, J., Barton, R., Goettsch, A., and Cross, R. "A Real-Time Distributed Virtual Environment for Collaborative Engineering", *Proceedings of Computer Applications in Production and Engineering* (CAPE), 712-726, November 1997.

**Panels**

**In Print**

Jerald, J., Marks, R., LaViola, J., Murphy, B., Steury, K., and Rubin, A. "The Battle for Motion-Controlled Gaming and Beyond", *ACM SIGGRAPH 2012*, August 2012.

Jacobson, J., Wingrave, C., Bowman, D., Brooks Jr., F., Jacob, R., LaViola, J., and Rizzo, A. "Reconceptualizing Virtual Reality: What is VR?", *IEEE Virtual Reality 2010*, 316, March 2010.

LaViola, J., Bowman, D., Ellis, S., Interrante, V., Lok, B., and Swan, J. "User Studies in VR: What Can We Learn From Them and What Are They Good For?", *IEEE Virtual Reality 2008*, 303-304, March 2008. (Organizer and Panelist)

**Courses and Tutorials**

**In Print**

LaViola, J. and Keefe, D. "3D Spatial Interaction: Applications for Art, Design, and Science", Course #1, Presented at ACM SIGGRAPH 2011, Vancouver, Canada, August 2011.

LaViola, J. and Marks, R. "An Introduction to 3D Spatial Interaction with Video Game Motion Controllers", Course #2, Presented at ACM SIGGRAPH 2010, Los Angeles, California, July 2010.

Otaduy, M., Igarashi, T., and LaViola, J. "Interaction: Interfaces, Algorithms, and Applications", Course #6, Presented at ACM SIGGRAPH 2009, New Orleans, Louisiana, August 2009.

LaViola, J., Kruijff, E., Bowman, D., Poupyrev, I., and Stuerzlinger, W. "3D User Interfaces: Design, Implementation, Usability", Course #16, Presented at ACM CHI 2009, Boston, Massachusetts, April 2009.

Kruijff, E., Bowman, D., LaViola, J., and Poupyrev, I. "3D User Interfaces: From Lab to Living Room", Course #17, Presented at ACM CHI 2008, Florence, Italy, April 2008.

LaViola, J., Igarashi, I., Alvarado, C., and Lipson, H. "Sketch-Based Interfaces: Techniques and Applications", Course #3, Presented at ACM SIGGRAPH 2007, San Diego, California, August 2007.

LaViola, J., Davis, R., and Igarashi, I. "An Introduction to Sketch-Based Interfaces", Course #18, Presented at ACM SIGGRAPH 2006, Boston, Massachusetts, July 2006.

Bowman, D., LaViola, J., Mine, M., and Poupyrev, I. "Advanced Topics in 3D User Interface Design", Course #44, Presented at ACM SIGGRAPH 2001, Los Angeles, California, August 2001.

Bowman, D., Kruijff, E., LaViola, J., Mine, M., and Poupyrev, I. "3D User Interface Design: Fundamental Techniques, Theory, and Practice", Course #36, Presented at ACM SIGGRAPH 2000, New Orleans, Louisiana, July 2000.

Bowman, D., Kruijff, E., LaViola, J., and Poupyrev, I. "The Art and Science of 3D Interaction", Full-day tutorial presented at IEEE Virtual Reality 2000, New Brunswick, New Jersey, March 2000.

Bowman, D. Kruijff, E., LaViola, J., Mine, M., and Poupyrev, I. "The Art and Science of 3D Interaction", Full-day tutorial presented at the ACM Symposium on Virtual Reality Software and Technology, London, England, December 1999.

Bowman, D., Kruijff, E., LaViola, J., and Poupyrev, I. "The Art and Science of 3D Interaction", Full-day tutorial presented at IEEE Virtual Reality '99, Houston, Texas, March 1999.

**Other Publications**

Wingrave, C., Norton, J., and LaViola, J. "Using Minecraft for Instruction and Creative Play", *CHI 2012 Workshop on Educational Interfaces, Software, and Technology*, May 2012.

Norton, J., Stringfellow, A., and LaViola, J. "Domestic Plant Guilds: A Novel Application for Sustainable HCI", *CHI 2012 Workshop on Simple, Sustainable Living*, May 2012.

Buchanan, S., Ochs, B., and LaViola, J. "CS Tutor: A Pen-Based Tool for Visualizing Data Structures", *Eighth Eurographics/ACM Symposium on Sketch-Based Interfaces and Modeling 2011*, August 2011. (Best Poster Award)

Wingrave, C., Hoffman, M., Sottilare, R. and LaViola, J. "Unobtrusive Mood Assessment for Training Applications", *CHI 2011 Workshop on Brain and Body Interfaces: Designing for Meaningful Interaction*, May 2011.

Bott, J. and LaViola, J. "The WOZ Math Recognizer: A Mathematics Handwriting Recognition Wizard of Oz Tool", Technical Report CS-TR-11-03, University of Central Florida, Department of Electrical Engineering and Computer Science, Orlando, FL, May 2011.

LaViola, J. "The Killer App for Sketch-Based Interfaces is …", *CHI 2010 Workshop on Designing Sketch Recognition Interfaces*, 54-57, April 2010.

Reiter, J., Kirby, R. M., and LaViola, J. "Immersive Hierarchical Visualization and Steering for Spectral/hp Element Methods", Technical Report CS-01-03, Brown University, Department of Computer Science, Providence RI, May 2001.

LaViola, J. "A Survey of Hand Posture and Gesture Recognition Techniques and Technology", Technical Report CS-99-11, Brown University, Department of Computer Science, Providence RI, June 1999. (cited 108 times, source: Google Scholar)

Pickering, J., Bhuphaibool, D., LaViola, J., and Pollard, N. "The Coach's Playbook", Technical Report CS-99-08, Brown University, Department of Computer Science, Providence RI, May 1999.

Forsberg, A., LaViola, J., and Zeleznik, R. "Incorporating Speech Input into Gesture-Based Graphics Applications at The Brown University Graphics Lab", *CHI'99 Workshop on Designing the User Interface for Pen and Speech Multimedia Applications*, May 1999.

LaViola, J., Forsberg, A., and Zeleznik, R. "Jot: A Framework for Interface Research", IBM's interVisions Online Magazine, Issue #11, February 1998.

LaViola, J. "Analysis of Mouse Movement Time Based on Varying Control to Display Ratios Using Fitts' Law", Technical Report CS-97-17, Brown University, Department of Computer Science, Providence RI, October 1997.

LaViola, J. "Experiment in VM Reduction, Conversion of Site Operating Procedures to the World Wide Web", IBM Technical Report, TR54.922, December 29, 1995.

## STUDENT ADVISING

**Post-Doc:**

Chadwick Wingrave (2008 – 2012)

**PhD:**

Corey Pittman, started Fall 2012

Christopher Zorn, started Fall 2011

Jeffrey Cashion, started Summer 2011

Bo Kang, started Spring 2011

Sarah Buchanan, started in Fall 2010

Arun Kulshreshth, started in Fall 2010

Jared Bott, started in Fall 2009

Salman Cheema, started in Summer 2008

Emiko Charbonneau, Ph.D. 2013. Dissertation Title: Bridging the Gap Between Fun and Fitness: Instructional Techniques and Real-World Applications for Full Body Dance Games

Paul Varcholik, Ph.D. 2011. Dissertation Title: Multi-Touch for General-Purpose Computing: An Examination of Text Entry

**Masters:**

Kevin Pfeil, M.S., 2013. Thesis Title: An Exploration of Unmanned Aerial Vehicle Direct Manipulation Through 3D Spatial Interaction

Travis Cossairt, M.S. 2012. Thesis Title: SetPad: A Sketch-Based Tool for Exploring Discrete Math Set Problems

Tad Litwiller, M.S. 2010. Thesis Title: Evaluating the Benefits of 3D Stereo in Modern Video Games

Prince Gupta, M.S. 2010. Thesis Title: Markerless Tracking Using Polar Correlation of Camera Optical Flow

Brian Williamson, M.S. 2009. Thesis Title: RealNav: Exploring Natural User Interfaces for Locomotion in Video Games

Jared Bott, M.S. 2009. Thesis title: VectorPad: A Tool for Visualizing Vector Operations

**Undergraduate:**

Scott Tanner, started Spring 2013

Anamary Leal, B.S. 2009. Honors Thesis title: Exploring the Effectiveness of 3D File Browsing Techniques for File Searching Tasks

**Thesis and Dissertation Committees**:

Amy Hoover, Computer Science, 2011

Bennie Lewis, Computer Science, 2011

Subhabrata Bhattacharya, Ph.D., Computer Science, 2013

Joseph Keebler, Ph.D. Psychology, 2011

Kennard Laviers, Ph.D. Computer Science, 2011

Juraj Obert, Ph.D. Computer Science, 2010

Dustin Chertoff, Ph.D., Modeling and Simulation, 2009

Jingen Liu, Ph.D., Computer Science, 2009

## TEACHING

CAP 6105: Pen-Based User Interfaces, Dept. of EECS, UCF (Fall 2013)

CAP 6121: 3D User Interfaces for Games and Virtual Reality, Dept. of EECS, UCF (Spring 2013)

CAP 6105: Pen-Based User Interfaces, Dept. of EECS, UCF (Fall 2012)

COP 3503H: Honors Computer Science II, Dept. of EECS, UCF (Fall 2012)

ISC 2215: Applications of Calculus I, UCF EXCEL Program, Co-Instructor (Spring 2012)

ISC 2216: Applications of Calculus II, UCF EXCEL Program, Co-Instructor (Spring 2012)

CAP 6121: 3D User Interfaces for Games and Virtual Reality, Dept. of EECS, UCF (Spring 2012)

ISC 2215: Applications of Calculus I, UCF EXCEL Program, Co-Instructor (Fall 2011)

CAP 6105: Pen-Based User Interfaces, Dept. of EECS, UCF (Fall 2011)

COP 3223: Introduction to C Programming (Fall 2011)

ISC 2215: Applications of Calculus I, UCF EXCEL Program, Co-Instructor (Spring 2011)

ISC 2216: Applications of Calculus II, UCF EXCEL Program, Co-Instructor (Spring 2011)

CAP 6121: 3D User Interfaces for Games and Virtual Reality, School of EECS, UCF (Spring 2011)

ISC 2215: Applications of Calculus I, UCF EXCEL Program, Co-Instructor (Fall 2010)

CAP 6105: Pen-Based User Interfaces, School of EECS, UCF (Fall 2010)

COP 3223: Introduction to C Programming (Fall 2010)

ISC 2215: Applications of Calculus I, UCF EXCEL Program, Co-Instructor (Spring 2010)

ISC 2216: Applications of Calculus II, UCF EXCEL Program, Co-Instructor (Spring 2010)

CAP 6121: 3D User Interfaces for Games and Virtual Reality, School of EECS, UCF (Spring 2010)

ISC 2215: Applications of Calculus I, UCF EXCEL Program, Co-Instructor (Fall 2009)

CAP 6105: Pen-Based User Interfaces, School of EECS, UCF (Fall 2009)

COP 3223: Introduction to C Programming (Fall 2009)

CAP 6938: 3D User Interfaces for Games and Virtual Reality, School of EECS, UCF (Spring 2009)

CAP 6938: Topics in Pen-Based User Interfaces, School of EECS, UCF (Fall 2008)

CAP 6938: 3D User Interfaces for Games and Virtual Reality, School of EECS, UCF (Spring 2008)

CAP 5937/6938: Topics in Pen-Based User Interfaces, School of EECS, UCF (Fall 2007)

COP 3502H: Honors Computer Science I, School of EECS, UCF (Spring 2007)

CS 193-33: Independent Study with Michael Katzourin, Department of Computer Science, Brown University (Fall 2006)

## INVITED TALKS

"Intelligent Tutoring Interfaces with Mathematical Sketching"

- Arizona State University, Phoenix, AZ (November 2013)

"QuickDraw: Improving Drawing for Geometric Diagrams"

- Microsoft Research Faculty Summit 2012, Redmond, WA (July 2012)

"3D Spatial Interaction with Commodity Hardware"

- GameTech 2012 Users' Conference, Orlando, FL (March 2012)

"Towards Intelligent Tutoring with Mathematical Sketching"

- INRIA Bordeaux - Sud-Ouest , Talence Cedex, France (July 2011)
- Microsoft Research, Redmond, WA (May 2011)

"Spatial 3D Interaction and Video Games"

- Washington University in St. Louis, St. Louis, MO (December 2008)
- Electronic Arts, Maitland, FL (August 2008)

**"**Research at the Interactive Systems and User Experience Lab"

- The Burnett Honors College, Orlando, FL (July 2008)

"Mathematics, Physics, and Chemistry: Tablet PC Research and Education"

- Florida Virtual School 14th Annual Staff Conference, Orlando, FL (September 2010)
- Modeling, Simulation, and Training techCAMP, Orlando, FL (January 2008)
- Modeling, Simulation, and Training techCAMP, Orlando, FL (November 2007)

"Mathematics, Physics, and Chemistry: Tablet PC Research and Education at Brown University"

- Pace University, NY, NY (April 2006)

"Mathematical Sketching: A New Approach for Creating and Exploring Dynamic Illustrations"

- Workshop on Computer Graphics: Current Trends in Research and Industry, Lahore University of Management Science, Pakistan (July 2007)
- SUNY Stony Brook, Stony Brook, NY (March 2006)
- Lehigh University, Bethlehem, PA (March 2006)
- University of Central Florida, Orlando, FL (March 2006)
- Aptima, Woburn, MA (September 2005)
- Wolfram Research, Champaign, IL (May 2005)
- Microsoft Research, Redmond, WA (February 2005)
- IBM Thomas J. Watson Research Center, Hawthorne, NY (December 2004)

## SERVICE TO THE PROFESSION

**Associate Editor:** IEEE Computer Graphics & Applications (2013-present)
ACM Transactions on Interactive Intelligent Systems (2013-present)
International Journal of Human-Computer Studies (2010-present)

**NSF Panelist:** Computer & Information Science & Engineering Directorate (September 2013)
Computer & Information Science & Engineering Directorate (April 2012)
Computer & Information Science & Engineering Directorate (April 2010)
Computer & Information Science & Engineering Directorate (January 2009)
Computer & Information Science & Engineering Directorate (September 2009)
**General Chair:** Eurographics Symposium on Sketch-Based Interfaces and Modeling 2010

**Program Chair:** IEEE Virtual Reality 2013
IEEE Symposium on 3D User Interfaces 2012
IEEE Symposium on 3D User Interfaces 2011
IEEE Symposium on 3D User Interfaces 2010
Eurographics Symposium on Sketch-Based Interfaces and Modeling 2009

**Associate Program Chair:** ACM Intelligent User Interfaces 2012
Foundations of Digital Games 2012

**Steering Committees:** Eurographics Symposium on Sketch-Based Interfaces and Modeling (2011-present)

**Panels Chair:** IEEE Virtual Reality 2006
**Publications Chair:** IEEE Virtual Reality 2007-2009
**Program Committees:** ACM Symposium on Spatial User Interaction (2013)
ACM Virtual Reality Software and Technology (2009-2010)
ACM Intelligent User Interfaces (2009)
Eurographics Short Papers Program (2008)
IEEE Symposium on 3D User Interfaces (2007-2009, 2014)
IEEE Virtual Reality (2007-2011, 2014)
Eurographics Symposium on Sketch-Based Interfaces and Modeling (2007-2008, 2011, 2012, 2013)
6th IEEE International Symposium on Mixed and Augmented Reality (2007)
2nd International Symposium on Visual Computing (2006)

**Journal Reviewer**: *IEEE Transactions on Neural Systems and Rehabilitation Engineering (2012)*
*ACM Transactions on Multimedia Computing Communications and Applications* (2011)
*ACM Transactions on Interactive Intelligent Systems* (2010-2011)
*Journal of Visual Languages and Computing* (2009)
*ACM Transactions on Computer-Human Interaction* (2009)
*IEEE Transactions on Aerospace and Electronic Systems* (2009)
*International Journal of Human Computer Studies* (2008-2011)
*Pattern Recognition* (2007)
*Computers and Graphics* (2001, 2006- 2008,2010,2011, 2013)
*IEEE Transactions on Pattern Analysis and Machine Intelligence* (2007)
*IEEE Computer Graphics and Applications* (2002-2003, 2005-2006, 2008, 2009)
*Computer Animation & Virtual Worlds* (2006)
*IEEE Transactions on Visualization and Computer Graphics* (2005, 2006, 2010,2011)

*IEEE Transactions on Robotics* (2005)
*Virtual Reality* (2005, 2010, 2012)
*Pattern Recognition Letters* (2005)

**External Conference Reviewer:** ACM Designing Interactive Systems (2014)
ACM International Conference on Multimodal Interaction (2013)
ACM Interactive Tabletops and Surfaces (2010)
ACM SIGGRAPH ASIA (2009,2010)
ACM SIGGRAPH Sketches and Poster's Juror (2007)
Graphics Interface (2005, 2007, 2009, 2010, 2012)
Eurographics Workshop on Virtual Environments (2002, 2004, 2007)
ACM UIST (2003, 2005, 2006, 2008, 2010, 2011,2012, 2013)
ACM CHI (2005-2006, 2010, 2011, 2012, 2013)
ACM Virtual Reality Software and Technology (2005)
ACM Intelligent User Interfaces (2013)
IEEE International Symposium on Wearable Computers (2010)
IEEE Virtual Reality (2005, 2012)
IEEE Visualization (2004)
ACM SIGGRAPH (2004, 2008, 2010, 2011, 2013)
12th IEEE Mediterranean Conference on Control and Automation (2004)
IEEE and ACM International Symposium on Mixed and Augmented Reality (2003, 2008, 2009, 2010, 2011, 2012, 2013)
ACM Symposium on Interactive 3D Graphics (2003)
ACM SIGGRAPH courses (1999)

**SERVICE TO UCF**

Member, Faculty Search Committee, EECS, 2013-2014
Member, EECS, Computer Science Division Executive Committee, 2013-2014
Member, EECS, Computer Science Division Website Committee, 2013
Member, Search Committee, Center for Research in Computer Vision, 2012
Member, Lecturer Promotion Committee, EECS, 2012
Member, Graduate Program Advisory Committee for the M&S Graduate Program, 2011-2012
Member, Industrial Advisory Committee, EECS, 2007-2009.
Member, Space Committee, EECS, 2008-2009.
Member, Faculty Search Committee, EECS 2009-2010.
Faculty, UCF EXCEL Program, 2009-2012

## EXTRACURRICULAR ACTIVITIES

Manager and Player of Computer Science Department intramural football and softball teams (1998-2006), Assistant Varsity Baseball Coach at Olympic Heights High School, Boca Raton, FL (1993-1994), Assistant Baseball Coach at American Legion Post 164, Boynton Beach, FL (1993). Hobbies include sports, computer games, and film.

## REFRENCES

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