

Employment

Post-Doc Researcher & Instructor

Florida International University

Spring 2015 -

- Mentor several students for Senior Project and Senior Design.
- Mentor lab (undergrad and graduate) students.
- Design TAMGeF. Touch-midAir-Motion Framework.
- Research multi-touch and other input devices.
- Write book titled: *Interaction Design for 3D User Interfaces*.
- Instructor for programming III, web development, and security courses.
- Mentor team of undergraduate developers.

Research & Teacher Assistant

Florida International University

Spring 2009 – Fall 2014

- Developed prototype using C++ Multi-Touch Win32 application with OpenGL for proposal.
- Developed prototype to test WiiMote using wiiLib in C++.
- Designed prototype using C++, OGRE3D and Win32 API using WiiMote and Multi-Touch.
- Instructor for Web Site Management and Construction (Summer 2012).
- Teacher Assistant for Programming I (Summer 2011, Fall 2011, Spring 2012).
- Coached Programming Competition (Fall 2012).

Software Engineer

IBLUES Corporation

Fall 1999 – Fall 2014

- Developed and designed from the ground up, CUBE, a .Net Windows and ASP.NET Inventory software.
- Designed and developed Estee Lauder Retail Sales application, a .NET automated import utility for data consolidation.
- Served as Lead Designer for Estee Lauder Data Consolidation project. This included a .Net windows application, ETL procedures in .NET, MS-SQL Server 2000 database design, EDI price catalog, and Crystal Reports.
- Managed three offshore developers in Chile for Estee Lauder.

Operator & Asst. SysAdmin

Tecnicard, Inc.

Spring 1994 – Fall 1999

- Worked as a systems' operator and provided assistance to systems' administrator.
- Provided system administration for OpenVMS running on Alpha and VAX systems for six countries.
- Developed C programs and DCL scripts for OpenVMS system automation tasks.

Education

Miami, FL

Florida International University

- Ph.D. in Computer Science. GPA: 3.72. **Fall 2014.**
Defense Date: **November, 7th 2014.**
Dissertation Title: *3D Navigation with Six Degrees-of-Freedom using a Multi-Touch Display.*
Nominated for College of Engineering Dissertation Award. **Fall 2014.**
Best Overall Graduate Student of School of Computing and Information Sciences. **2014.**
Topics: Human Computer Interaction/3D User Interfaces/3D Navigation using Multi-Touch Displays, Petri Net Modeling Language for Input Devices.
Ph.D. GAANN Fellow awarded by U.S. Department of Education. **4 years.**
McKnight Dissertation Fellow awarded by Florida Education Fund. **4 semesters.**
- M.S. in Computer Science, GPA: 3.8. **Fall 2008.**
- B.S. in Computer Science, GPA: 3.5; In-major GPA: 3.7. **Fall 2007.**
- US Patent Pending: MT Machine.
- Partial List of Graduate Coursework: Compiler Construction; Digital Image Processing; Computer Vision; Real-Time DSP; Artificial Intelligence; Data Mining; Algorithms; Theory of Computation; Affective Computing; Neural Networks; Expert Systems; Advanced Databases; Advanced Computer Graphics; Operating Systems.

Teaching

CAP 5602	Intro to AI	Spring 2009	Teacher Assistant
CGS 2060L	Intro Micro Computers	Spring 2010	Lab Instructor
COP 2210L	Programming I	Summer 2010, Fall 2010, Spring 2011	Lab Instructor
COP 2210L	Programming I	Summer 2011, Fall 2011, Spring 2012	Lab Instructor
CGS 4854	Web Site Construction	Summer 2012	Instructor
FIU	Prog. Competition	Fall 2012	Programming Coach
FIU	Java Workshop	Fall 2012	Instructor
COP 2210L	Programming I	Spring 2013	Lab Instructor
COP 4338	Programming III	Spring 2015, Summer 2015	Instructor
ECE 4802	Digital Forensics	Spring 2015	Instructor
ECE 6803	Adv. Digital Forensics	Spring 2015, Summer 2015	Instructor
EEL 5807	Adv. Ethical Hacking	Summer 2015	Instructor
COP 4813	Web Application Prog.	Fall 2015	Instructor

Mentoring

CIS 4911	Senior Project CS	Spring 2015, Summer 2015, Fall 2015	5 Students
EEL 4920	Senior Design I ECE	Fall 2015	11 Students
EEL 4921C	Senior Design II ECE	Spring 2016	11 Students
IDH 4007	Honors College Research	Fall 2015	Jonathan Bernal
IDH 4905	Honors College Research	Spring 2016	Jonathan Bernal
	Master Student	Fall 2015 -	Ruben Balcazar
	REU	Summer 2015 -	Jason Lee-Thomas
	REU	Summer 2015 -	Alain Galvan
	Volunteers	Fall 2015	2 Students
	CS Undergrad	Fall 2014 (Computer Graphics)	2 Students

Publications (Books, Patents, Book Chapters, Journals, Conference Proceeding)

- Ortega F., Rische N., Barreto A., *Handbook of Input and 3D User Interaction: Theory and Practice*, CRC Press/AK Peters book. 2016.
- Ortega F., Barreto A., Rische N., Adjouadi M., and Reng P., "3D Navigation using Multi-Touch Non-Stereo Desktop Display with Six Degrees of Freedom and Device Switching," Submission in process to IEEE TVCG. 2016.
- Ortega F., Rische N., Barreto A., "TAMGeF: Touch-midAir-Motion Framework for Spatial Input," In Proceedings of the 1st symposium on Spatial user interaction. ACM SUI '15.
- Tangnimitchok, S., Barreto, A., O-Larnnithipong, N., Ortega, F., Rische, N., "Finding an Efficient Threshold for Fixation Detection in Eye Gaze Tracking," HCI International 2016, Toronto, Canada. 2016.
- Abyarjoo, F., O-Larnnithipong, N., Tangnimitchok, S., Adjouadi M., Ortega, F., Barreto A., "PostureMonitor: Real-Time IMU Wearable Technology to Foster Poise and Health," HCI International 2015, Los Angeles, CA. 2015.
- Ortega F., Abyarjoo F., Barreto A., Rische N. and Adjouadi M., *Interaction Design for 3D User Interfaces: The World of Modern Input Devices for Research, Applications, and Game Development*. CRC Press/AK Peters book publication. 2015.
- Ortega F., Rische N., Barreto A., "Gesture Discernment and Processing System," US Utility Patent Filed November 28th, 2014.
- Ortega, F., Barreto A., Rische N., Adjouadi M., Abyarjoo F., and O-larnnithipong, N., "GyroTouch: Complementing the Multi-Touch Display," HCI International. 2015.
- Ortega F., Hernandez F., Barreto A., Rische N., Adjouadi M., and Liu S., "PeNTa: Multi-Touch Modeling using Petri Nets," In Human-Computer Interaction. Theories, Methods, and Tools, pages 361–372. Springer International Publishing. January 2014.

- Cofino J., Barreto A., Abyarjoo F., Ortega F., "B.A.S.S. Blind-Assistive Spatialized Screen-reading," Tapia. 2014.
- Ortega, F., Barreto A., Rische N., Adjouadi M., Liu S., "Exploring Modeling Language for Multi-Touch Systems using PetriNet," In Proceedings of the Interactive Tabletops and Surfaces (ITS '13), ACM, New York, NY, USA. pp. 361-364. 2013.
- Peng Ren, Armando Barreto, Jian Huang, Ying Gao, Francisco R. Ortega, Malek Adjouadi. "Off-line and On-line Stress Detection through Processing of the Pupil Diameter Signal." Annals of Biomedical Engineering.
- Ortega F., Barreto A., Rische N., "Augmenting Multi-Touch with Commodity Devices," In Proceedings of the 1st symposium on Spatial user interaction (SUI '13). ACM, New York, NY, USA, p. 95. 2013.
- Ortega F., Barreto A., Rische N. and Adjouadi M., Abyarjoo F., "Poster: Real-Time Gesture Detection for Multi-Touch Devices," IEEE 8th Symposium on 3D User Interfaces, pp. 167-168. 2013.
- Cofino J., Barreto A., Abyarjoo F., Ortega F., "Sonifying HTML Tables for Audio-Spatially Enhanced Non-visual Navigation," IEEE SoutheastCon. 2013.
- Abyarjoo F., Barreto A., Abyarjoo S., Ortega F., Cofino J., "Monitoring Human Wrist Rotation in Three Degrees of Freedom," IEEE SoutheastCON. 2013.
- Ortega F., Barreto A., Rische N. and Adjouadi M., Abyarjoo F., "Multi-Touch Gesture Recognition using Feature Extraction," CISSE. 2012.
- Abyarjoo F., Barreto A., Cofino J., Ortega F., "Implementing a Sensor Fusion Algorithm for 3D Orientation Detection with Inertial/Magnetic Sensors," CISSE. 2012.
- Ortega F., Barreto A., Rische N. and Adjouadi M., "Towards 3D Data Environments using Multi-Touch Screens," 118-121, ACHI. 2012.
- Ortega F., Barreto A., Rische N. and Adjouadi M., "Interaction with 3D Environments using Multi-Touch Screens," CISSE. 2011.
- Hernandez H., Ortega F., "Reducing Video Game Creation Effort with Eberos GML2D," Chapter in *Game Development Tools Books* edited by Marwan Y. Ansari. AK Peters/CRC Press. May 2011.
- Hernandez H., Ortega F., "Eberos GML2D: A Graphical Domain-Specific Language for Modeling 2D Video Games," The 10th Workshop on Domain-Specific Modeling proceedings. 2010.
- Wu Y., Hernandez F., Ortega F., Clarke PJ. and France R., "Measuring the Effort for Creating and Using Domain-Specific Models," The 10th Workshop on Domain-Specific Modeling proceedings. 2010.
- Verhoef T., Lisetti C., Barreto A., Ortega F., Van der Zant T. and Cnossen F., "Bio-sensing for Emotional Characterization without Word Labels," Human-Computer Interaction. Ambient, Ubiquitous and Intelligent Interaction, 13th International Conference, HCI International. LNCS 5612, pp. 693–702. 2009.

Grants and Awards (All Monetary Awards in US Dollars)

- \$1,000.00 to purchase equipment related to 2016 Handbook. CRC Press. June 2015.
- Microsoft and Tapia Conference Gaming Code-A-Thon First Prize. XBOX ONE (\$500.00). 2014.
- \$986.00 Tapia Conference Scholarship Award. 2014
- McKnight Dissertation Fellowship by FEF Fund. Award consisted of \$17,000, plus tuition cost and health insurance. In addition, this included travel funds to FEF conferences. 2013-2014.
- \$1,000.00 dollars to purchase equipment related to 3D User Interfaces. CRC Press. May 2012.
- \$350.00 US Dollars ACM I3D 2013 conference stipend. 2013.
- GAANN Ph.D. Fellowship awarded by US Department of Education for Teaching and Research Experience. Award consisted of \$30,000 a year plus tuition, equipment, and travel funds for a period of 3 years. 2012-2014.
- Nominated for Best Graduate Student for College of Engineering. 2014.
- Best Graduate Student of School of Computing and Information Sciences. 2014.

Partial List of Projects

- **Spider Sensor** (2015 -). System to allow the recognition of hand-gesture interaction using motion sensors.
- **Smart Learning Desk** (2015 -). System design for education and other domains with advanced user interaction system.
- **MoMRec** (2015-). Multi-Modal recognition for multi-touch and pen.
- **AEON 3D Navigational System** (2015-). System to research 3D navigation using cutting-edge graphics and gesture recognition systems.
- **HoloLens** (2016 -). Human Sensation Project.
- **TAMGeF** (2015-). Touch-midAir-Motion Gesture Framework.
- **Petri-Net Input Modeling Language** (2013). Modern input devices modeling language.
- **Multi-Touch 3D Navigation System** (2011-2013). Research Prototype to test 3D Navigation System using Custom Multi-Touch Gesture Recognition, WiiMote controller, 3D mouse and gamepad. C++, Boost, WiiMoteLib, Win32 API, OGRE3D and OpenGL.
- **Data Systems for Estee Lauder** (2005 – 2014). Various applications developed in C# .NET, Crystal Reports, T-SQL, Excel COM+, and Microsoft Access.
- **Retail Sales Application for Estee Lauder** (2006 – 2014). Desktop .Net interface for Estee Lauder to process excel data in various layout format. C# .NET, T-SQL, Excel COM+. This was an ETL application.
- **Cube Inventory System** (2005-2006). Desktop and web application to managed inventory logistics. C#, T-SQL.

Service (College-wide, Departmental, Outreach, Scientific Community, and Professional Societies)

- Mentoring of graduate students (2015).
- Mentoring of undergraduate students for Computer Science Senior Project, Electrical and Computer engineering Senior Design, and Honors College (2015).
- Mentoring of undergraduate students in Computer Science (not in Senior Project) (2012-2015).
- ACM SUI (2016) Co-publicity chair.
- FIU Beyond 2020. Workgroup for increase production of Ph.D. students and Post-Doctoral fellows for AIRE Strategic Plan committee (2015-).
- Outreach program to Conchita Espinosa School for Technology k-12 education (2015).
- Reviewer for IEEE Sensors Journal (2013,2014,2015).
- Reviewer for ACM RICHARD TAPIA Conference. Diversity in Computing (2015, 2016).
- Reviewer for IEEE Journal of Biomedical and Health Informatics (2013).
- Reviewer for IEEE Transactions on Affective Computing (2012).
- Participated in Career Day at W.R. Thomas Middle School (2012).
- Leader of Graduate Students at SCIS (2009-2011).
- Carnegie Style Review Program Doctoral Review Committee – Student Member for SCIS (2010).
- Student Volunteer ACM Assets (2010).
- Active member of ACM since (2008).
- Leader for Local Chapter of SigGraph at FIU (2007).
- Women's Soccer Coach (Volunteer) in W.R. Thomas Middle School (2006-2008).

Presentations

- Ortega, F., TAMGeF: Touch-midAir-Motion Framework for Spatial Input, ACM SUI 2015 fast forward and poster presentation Los Angeles, CA. 2015.
- Ortega, F., PostureMonitor: Real-Time IMU Wearable Technology to Foster Poise and Health, HCI International. Los Angeles, CA. August 2015.
- Ortega, F., GyroTouch: Complementing the Multi-Touch Display, HCI International. Los Angeles, CA. August 2015.
- Ortega, F., Towards 3D navigation using Multi-Touch Displays. University of Florida (Computer Science). Invited by Lisa Anthony. Gainesville, FL, 2015.
- Ortega, F., PeNTa: Formal Modeling for Multi-Touch Systems Using Petri Net. HCI International. Crete, Greece. June 2014.
- Ortega, F., GyroTouch: Augmenting the Multi-Touch. Poster. Tapia. 2014.

- Ortega, F., Feature Extraction for Multi-Touch. FEF meeting at FIU. Miami, FL. 2013.
- Ortega, F. 3D Navigation with Commodity Devices and the Formalization of Multi-Touch language. University of Leeds, Leeds, England. October 18, 2013. Colloquium Friday Series, Invited by Dr. Roy Ruddle.
- Ortega, F. Poster Presentation. Exploring Modeling Language for Multi-Touch Systems using PetriNet. ITS 2013. St. Andrew, Scotland. 2013.
- Ortega, F. Poster Presentation and 1 Minute Fast-Forward. Augmenting Multi-Touch with Commodity Devices. SUI 2013. Los Angeles, California. 2013.
- Ortega, F. Looking ahead. A Case for 3D User Interfaces. Guest Speaker for Florida International University Soft. Eng. Course. Miami, FL. 3/27/2012.
- Ortega, F. Poster Presentation and Fast Forward: March 16-17, 2013. IEEE 8th Symposium on 3D User Interfaces. 2013.
- Ortega, F. Natural User Interfaces in 3D Navigation. Guest Speaker Florida International University. Guest Speaker for Computer Graphics Course. 2/26/2012.
- Ortega, F. Motivating young minds: Computer Science and Human-Computer Interaction. Guest for Career Day at W.R Thomas Middle School. 13001 SW 26 STREET MIAMI, FL 33175. May 2nd, 2012.
- Ortega, F., 3D Navigation via 2D Multi Touch Surfaces. CS PhD Student Seminars, Florida International University, ECS 349. April 12, 2012.
- Ortega, F., Multi-Touch Gesture Recognition using Feature Extraction, Bridgeport, CT. CISSE 2012.
- Ortega, F. HCI and 3D Navigation. Guest for Human Computer Interaction Course CEN-3271, Florida International University, ECS 141. Feb 23, 2012.
- Ortega, F., Interaction with 3D Environments using Multi-Touch Screens, Bridgeport, CT. CISSE 2011.

Languages and Technologies

- Currently in use: C++, C#, and Java (in the order listed).
- C++; C; Java; C# and ASP.NET; SQL (T-SQL); Visual Basic; Visual Basic for Applications.
- Microsoft SQL; Crystal Reports; Microsoft Access; Win32 API; Ogre3D; OpenGL; WIN32 Multi-Touch API.

Notes

- **Dual Citizen:** US Citizen and Chilean Citizen.