Francisco R. Ortega
Curriculum Vitae

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EDUCATION

Florida International University — Miami, FL
Ph. D. in Computer Science – GPA: 3.72 — *Fall 2014*

Florida International University — Miami, FL
M. S. in Computer Science – GPA: 3.8 — *Fall 2008*

Florida International University — Miami, FL
B. S. in Computer Science – GPA: 3.5 – In-major GPA: 3.7 — *Fall 2007*

Dissertation

Title: *3D Navigation with Six Degrees-of-Freedom Using a Multi-Touch Display*
Advisors: Dr. Armando Barreto and Dr. Naphtali Rishe

My dissertation provides an in-depth review of multi-touch technology used in 3D navigation. A 3D travel user-study that compares a multi-touch display and game controller in a pseudo-universe, found that there was a significant difference between experienced console gamers and casual gamers game controller is used. However, no difference was found in the analysis of the multi-touch display. This dissertation is the basis for a post-Ph.D. research that has led to improvement of gesture-recognition and elicitation. In addition, the research conducted during this time included a theoretical model for multi-touch interaction via high-level Petri Nets, and a feature-extraction algorithm for multi-touch displays.

PROFESSIONAL APPOINTMENTS

- Assistant Professor, Director of NUI Lab, Colorado State University, Fall 2018 – Present.

- Assistant Professor (Courtesy Appointment), Florida International University, Fall 2018 – Present.

- Visiting Assistant Professor, Director of OpenHID Lab, Florida International University, Fall 2016 – Summer 2018.

- Vertically Integrated Projects (VIP) Coordinator, Florida International University, Spring 2016 – Spring 2018.

- Visiting PostDoc Fellow, Director of OpenHID Lab, Florida International University, Spring 2015 – Summer 2016.

ADDITIONAL WORK EXPERIENCE

- Research & Teacher Assistant, Florida International University, Spring 2009 – Fall 2014.

- Software Engineer, IBLUES Corporation, Fall 1999 – Fall 2014

- Operator & Asst. SysAdmin, Tecnicard, Inc., Spring 1994 – Fall 1999

GRANTS

Awarded

- CO-PI: Florida Center for Cybersecurity (FC^2), University of South Florida, "Using a Cyberlearning Environment to Enhance Critical Cybersecurity Education", $100,000, 2017.

- PI: "NIH-NIDA SUD Challenge – BioBrace VR: Bio-Interactive Device with Personalized Avatar Therapy for SUD", $10,000, Awarded to BioMagic VR, Inc. in preparation for STTR/SBIR.

- PI: "NSF SBIR Phase IIA: 2.5D Extensions to Braille-based User Interaction", Polymer Braille Inc, $105,000, Award AWD000000006592, Project No: 800007091, May-18-2016.

- "Florida Consortium of Metropolitan Research Universities, Summer Grant", $3,000, 2016.

- "IUCRU CAKE additional membership fees from OverIT (Italian-based company)", $3,000, June, 2016.

- "IUCRU CAKE membership fees from OverIT (Italian-based company)", $5,000, June, 2016.

- "IUCRU CAKE membership fees from Polymer Braille Inc", $5,000, June, 2016.

NOT FUNDED (2018–present)

- PI: "Computer Science Gaming to Improve Self-Efficacy and Awareness of this Domain", Entertainment Software Association Foundation, $50,000. Submitted July 2018.

- PI: "BioBrace: A Biometric Wrist Monitor for Mitigation of Opioid Usage for Recovering Addicts', Robert Wood Johnson Foundation , AI Health Challenge, $50,000. Submitted June 2018.

PUBLICATIONS

Pending

1. **Ortega, F.**, Tarre, K., William, A., Rishe, N., and Barreto, A., 3D Navigation for 6DOF Using Multi-Touch vs. GamePad. To be submitted in *International Journal of Human–Computer Interaction*, October 2018.

2. **Ortega, F.**, Kress, M., Tarre, K., , Rishe, N., and Barreto, A., Whole-Body Gesture Elicitation Study in a Virtual Reality Environment for Selection and Manipulation Interaction. Submitted to *ACM Interactive Spatial Surfaces 2018*.

3. Tarre, K., **Ortega, F.**, Kress, M., Tarre, K., , Rishe, N., and Barreto, A., Towards First Person Gamer Modeling and The Problem with Game Classification in User Studies". To be submitted to *ACM Virtual Reality Software and Tools*, 2018.

Refereed Journals

4. Cofino J., Barreto A., Abyarjoo F., and **Ortega, F.**, Sonically-Enhanced Tabular Screen-Reading. In *Journal on Technology & Persons with Disabilities (JTPD)*, Vol. 2, pp. 46–57, 2014.

5. Ren P., Barreto A., Huang J., Gao Y., **Ortega, F.**, and Adjouadi, M., Off-line and On-line Stress Detection through Processing of the Pupil Diameter Signal. In *Annals of Biomedical Engineering*, vol. 42, no. 1, pp. 162–176, 2014.

Refereed Conferences

6. Tangnimitchok, S., O-larnnithipong, N., Ratchatanantakit, N., Barreto, A., **Ortega, F.**, and Rishe, N., A System for Non-Intrusive Affective Assessment in the Circumplex Model from Pupil Diameter and Facial Expression Monitoring to appear in *Human-Computer Interaction. Theories, Methods, and Human Issues*, HCI 2018, Lecture Notes in Computer Science, Springer, vol 10901, pp. 465–477, 2018.

   Tangnimitchok S., O-larnnithipong N., Ratchatanantakit N., Barreto A., Ortega F.R., Rishe N.D. (2018) A System for Non-intrusive Affective Assessment in the Circumplex Model from Pupil Diameter and Facial Expression Monitoring. In: Kurosu M. (eds) Human-Computer Interaction. Theories, Methods, and Human Issues. HCI 2018. Lecture Notes in Computer Science, vol 10901. Springer, Cham

7. Balcazar, R., **Ortega, F.**, Tarre, K., Barreto, A., Weiss, M., and Rishe, N., CircGR: Interactive Multi-Touch Gesture Recognition using Circular Measurements. In *Proceedings of the 2017 ACM International Conference on Interactive Surfaces and Spaces* (ISS '17). ACM, New York, NY, USA, 2018. pp. 12-21.

8. **Ortega, F.**, Galvan, A., Tarre, K., Barreto, A., Rishe, N., Bernal, J., Balcazar, R., and Thomas, J., Gesture Elicitation for 3D Travel via Multi-Touch and Mid-Air Systems for Procedurally Generated Pseudo-Universe. In *2017 IEEE Symposium on 3D User Interfaces* (3DUI '17), Los Angeles, CA, 2017, pp 144–153.

9. Tangnimitchok, S., O-Larnnithipong, N., Barreto, A., **Ortega, F. R.**, and Rishe, N. D., Finding an Efficient Threshold for Fixation Detection in Eye Gaze Tracking. In *International Conference on Human-Computer Interaction, Interaction Platforms and Techniques* of the series Lecture Notes in Computer Science- Volume 9732, pp. 93—-103, Springer-Verlag New York, Inc., Jul. 2016.

10. Abyarjoo, F., O-Larnnithipong, N., Tangnimitchok, S., Adjouadi, M., **Ortega, F.**, and Barreto, A., PostureMonitor: Real-Time IMU Wearable Technology to Foster

Poise and Health. In *International Conference of Design, User Experience, and Usability* of the series Lecture Notes in Computer Science, vol. 9188, Springer International Publishing, pp 543–552, 2015.

11. **Ortega, F.**, Barreto, A., Rishe, N., Adjouadi, M., Abyarjoo, F., and O-Larnnithipong, N., GyroTouch: Wrist Gyroscope with a Multi-Touch Display. In *International Conference on Human-Computer Interaction*, Human-Computer Interaction: Interaction Technologies of the series Lecture Notes in Computer Science, vol. 9170, pp. 262–270, Springer International Publishing, 2015.

12. **Ortega, F.**, Barreto, A., Rishe, N., Adjouadi, M., and Abyarjoo, F., Multi-Touch Gesture Recognition Using Feature Extraction. In *Innovations and Advances in Computing, Informatics, Systems Sciences, Networking and Engineering* of the series Lecture Notes in Electrical Engineering, vol. 313, pp. 291–296, Springer International Publishing, 2015.

13. Abyarjoo, F., Barreto, A., Cofino, J., and **Ortega, F.**, Implementing a Sensor Fusion Algorithm for 3D Orientation Detection with Inertial/Magnetic Sensors. In *Innovations and Advances in Computing, Informatics, Systems Sciences, Networking and Engineering* of the series Lecture Notes in Electrical Engineering, vol. 313, pp. 305–310, Springer International Publishing, 2015.

14. **Ortega, F.**, Liu, S., Hernandez, F., Barreto, A., Rishe, N., and Adjouadi, M., PeNTa: Multi-Touch Modeling using Petri Nets. In *International Conference on Human-Computer Interaction*, Human-Computer Interaction: Theories, Methods, and Tools of the series Lecture Notes in Computer Science, HCI International 2014, vol 8510, pages 361–372. Springer International Publishing, June 2014.

15. Cofino, J., Barreto, A., Abyarjoo, F., and **Ortega, F.**, Sonifying HTML Tables for Audio-Spatially Enhanced Non-Visual Navigation. In *2013 Proceedings of IEEE SoutheastCon*, Jacksonville, FL, pp. 1–5, 2013.

16. Abyarjoo, F., Barreto, A., Abyarjoo, S., **Ortega, F.**, and Cofino, J., Monitoring Human Wrist Rotation in Three Degrees of Freedom. In *2013 Proceedings of IEEE SoutheastCon*, Jacksonville, FL, pp. 1–5, 2013

17. **Ortega, F.**, Barreto, A., Rishe, N., and Adjouadi, M., Interaction with 3D Environments Using Multi-Touch Screens. In *Innovations and Advances in Computer, Information, Systems Sciences, and Engineering* of the series Lecture Notes in Electrical Engineering, vol. 152, pp. 381–392, CISSE. Springer, New York, 2013.

18. Wu, Y., Hernandez, F., **Ortega, F.**, Clarke, P., and France, R., Measuring the Effort for Creating and Using Domain-Specific Models. In *Proceedings of the 10th Workshop on Domain-Specific Modeling* (DSM '10). ACM, New York, NY, USA, article 14, pages 6, 2010.

19. Verhoef, T., Lisetti, C., Barreto, A., **Ortega, F.**, Van der Zant, T., and Cnossen, F., Bio-sensing for Emotional Characterization without Word Labels. In *Human-Computer Interaction. Ambient, Ubiquitous and Intelligent Interaction, 13th International Conference, HCI International.* Lecture Notes in Computer Science, vol 5612, pp. 693–702, Springer, Berlin, Heidelberg. 2009.

Workshop and Posters Refereed Papers

20. **Ortega, F.**, Jamides, S., Barreto, A., and Rishe, N., The Tabletop is dead. Long Live the Tabletop!. In *The Disappearing Tabletop: Social and Technical Challenges for Cross-Surface Collaboration* workshop on Interactive Surfaces and Spaces (ISS '17). 2017. Available at: https://thedisappearingworkshop.wordpress.com/at-the-workshop/

21. **Ortega, F.**, Bolivar, S., Bernal, J., Galvan, A., Tarre, K., Rishe, N., and Barreto, A., Towards a 3D Virtual Programming Language to Increase the Number of Women in Computer Science Education. In *2017 IEEE Virtual Reality Workshop on K-12 Embodied Learning through Virtual & Augmented Reality* (KELVAR), Los Angeles, CA. pp. 1–6.

22. Galvan, A., **Ortega, F.**, and Rishe, N., Procedural Celestial Rendering for 3D Navigation. In *2017 IEEE Symposium on 3D User Interfaces (3DUI)*, Los Angeles, CA. 2017. pp. 211–212

23. Calella, J., **Ortega, F.**, Rishe, N., Barreto, A., and Bernal, J., HandMagic: Towards User Interaction with Inertial Measuring Units. In *2016 IEEE SENSORS*. Orlando, FL. 2016, pp. 1-3.

24. **Ortega, F.**, Balcazar, R., Barreto, A., and Rishe, N., Smart Learning Desk: Towards an Interactive Classroom. In *IEEE Virtual Reality 2016 Workshop on K-12 Embodied Learning through Virtual & Augmented Reality* (KELVAR '16), Mar. 2016. Available at: https://sites.google.com/site/vrkelvar/vr2016

25. Vassigh, S., Elias, A., **Ortega, F.**, Davis, D., Gallardo, G., Alhaffar, H., Borges, L., Bernal, J., and Rishe, N., Integrating Building Information Modeling with Augmented Reality for Interdisciplinary Learning." In *2016 IEEE International Symposium Mixed and Augmented Reality* (ISMAR-Adjunct), pp. 260–261, IEEE, 2016.

26. **Ortega, F.**, Rishe, N., and Barreto, A., TAMGeF: Touch-midAir-Motion Framework for Spatial Input. In *Proceedings of the 3rd ACM Symposium on Spatial User Interaction (SUI '15)*. ACM, New York, NY, USA, pp. 136, 2015.

27. **Ortega, F.**, Barreto, A., Rishe, N., Adjouadi, M., and Liu, S., Exploring Modeling Language for Multi-Touch Systems Using Petri Nets. In *Proceedings of the 2013 ACM International Conference on Interactive Tabletops and Surfaces* (ITS '13), ACM, New York, NY, USA. pp. 361–364. 2013.

28. **Ortega, F.**, Barreto, A., and Rishe, 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.

29. **Ortega, F.**, Barreto, A., Rishe, N. and Adjouadi, M., and Abyarjoo, F., Poster: Real-Time Gesture Detection for Multi-Touch Devices. In *IEEE 8th Symposium on 3D User Interfaces* (3DUI '13), Orlando, FL, pp. 167-168. 2013.

30. Hernandez, H., **Ortega, F.**, Eberos GML2D: A Graphical Domain-Specific Language for Modeling 2D Video Games. In *Proceedings of the 10th Workshop on*

Domain-Specific Modeling (DSM '10). ACM, New York, NY, USA, article 4, pages 6, 2010.

Demo Papers

31. Balcazar, R., **Ortega, F.**, Tarre, K., Barreto, A., Weiss, M., Rishe, N., [DEMO] CircGR: Interactive Multi-Touch Gesture Recognition using Circular Measurements, to appear in *Proceedings of the 2017 ACM on Interactive Surfaces and Spaces (ISS '17)*. Brighton, England.

Book Chapters

32. Hernandez, H., **Ortega, F.**, Reducing Video Game Creation Effort with Eberos GML2D. Chapter in *Game Development Tools* edited by Marwan Y. Ansari. AK Peters/CRC Press. New York, NY, 2011.

Books

33. **Ortega, F.**, Abyarjoo, F., Barreto, A., Rishe, 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, New York, NY, 2016.

Invited Papers

34. O-larnnithipong, N. Barreto, A., Ratchatanantakit, N., Tangnimitchok, S., and **Ortega, F.**, Real-Time Implementation of Orientation Correction Algorithm for 3D Hand Motion Tracking Interface. In *Universal Access in Human-Computer Interaction. Methods, Technologies, and Users*. UAHCI 2018. Lecture Notes in Computer Science, Springer, vol 10907, pp. 228–242. Invited session: Spatial User Interaction Beyond the Mouse, Las Vegas, NV, 2018.

35. Bolivar, S., **Ortega, F.**, Zock-Obregon, M., and Rishe, N., 3D Spatial Gaming Interaction to Broad CS Participation. In *Universal Access in Human-Computer Interaction. Virtual, Augmented, and Intelligent Environments*. UAHCI 2018. Lecture Notes in Computer Science, Springer, vol 10908, pp. 39–47. Invited session: Spatial User Interaction Beyond the Mouse, Las Vegas, NV, 2018.

    Torres N., Ortega F.R., Bernal J., Barreto A., Rishe N.D. (2018) Towards Multimodal Interaction with Interactive Paint. In: Antona M., Stephanidis C. (eds) Universal Access in Human-Computer Interaction. Methods, Technologies, and Users. UAHCI 2018. Lecture Notes in Computer Science, vol 10907. Springer, Cham

36. Torres, N., **Ortega, F.**, Bernal, J., Barreto, A., and Rishe, N., Towards Multi-Modal Interaction with Interactive Paint . In *Universal Access in Human-Computer Interaction. Virtual, Augmented, and Intelligent Environments*. UAHCI 2018. Lecture Notes in Computer Science, Springer, vol 10907, pp. 299–308. Invited session: Spatial User Interaction Beyond the Mouse, Las Vegas, NV, 2018.

37. Vassigh, S., **Ortega, F.**, Barreto, A., Tarre, K., and Maldonado, J., Use of 3D Human-Computer Interaction for Teaching in the Architectural , Engineering and Construction Fields. In *Universal Access in Human-Computer Interaction. Virtual, Augmented, and Intelligent Environments.* UAHCI 2018. Lecture Notes in Computer Science, Springer, vol 10908, pp. 149–159. Invited session: Spatial User Interaction Beyond the Mouse, Las Vegas, NV, 2018.

Other Referred Papers

38. Aazhang, B., ... **Ortega, F. R.**, et al., Vertically Integrated Projects (VIP) Programs: Multidisciplinary Projects with Homes in Any Discipline In *2017 ASEE Annual Conference & Exposition*, Columbus, Ohio. June, 2017. Available at https://peer.asee.org/29103.

Non-Refereed Papers

39. **Ortega, F.**, Barreto, A., Rishe, N., and Adjouadi, M., Towards 3D Data Environments Using Multi-Touch Screens. In *ACHI 2012: The Fifth International Conference on Advances in Computer-Human Interactions*, pp. 118–121, 2012.

40. **Ortega, F.**, Barreto, A., Rishe, N., Adjoudi, M., and Abyarjoo, F., GyroTouch: Complementing the Multi-Touch Display. In *ACM Richard Tapia Celebration of Diversity in Computing*, 2014.

41. Cofino, J., Barreto, A., Abyarjoo, F., and **Ortega, F.**, B.A.S.S. Blind-Assistive Spatialized Screen-reading. In *ACM Richard Tapia Celebration of Diversity in Computing*, 2014.

PATENTS & APPLICATIONS

PATENTS

1. **Ortega, F.**, Rishe, N., and Barreto, A., Gesture Discernment and Processing System. Patent No.: US 9,886,190 B2. Date of Patent: Feb. 6, 2018. US Utility Patent filed November 28th, 2014, USPS Application Number 20160091977, publication date March 31st, 2016.

2. Barreto, A., Rishe, N., **Ortega, F.**, O-Larnnithipong, N., VRT: Virtual Round Table. Patent No.: US 9,900,555 B1, Date of Patent: Feb. 20, 2018. Disclosed to FIU, January, 2017.

APPLICATIONS & DISCLOSURES

3. **Ortega, F.**, Calella, J., Rishe, N., and Iyengar, S.S, 3D Touch Conductive Fabric. Disclosed to FIU, June, 2017. Current Status: Approved by FIU for application submission.

4. **Ortega, F.**, Rishe, N., and Barreto, A., MagicMotion. Disclosed to FIU, May, 2016. Current Status: Approved by FIU for application submission.

ACADEMIC HONORS

- Nominated for College of Engineering Dissertation of the Year Award, 2014.

- Best Overall Graduate Student of the School of Computing and Information Sciences Year Award, 2014.

- Microsoft and Tapia Conference Gaming Code-A-Thon First Prize: Xbox ONE ($500.00), 2014.

- $986.00 Tapia Conference Scholarship Award, 2014.

- $350.00 US Dollars ACM I3D 2013 conference stipend, 2013.

- *Cum Laude* honors for Bachelor in Computer Science, 2007.

FELLOWSHIPS

- Ph.D. GAANN Fellowship awarded by the US Department of Education, 4 years.

- McKnight Dissertation Fellowship awarded by Florida Education Fund, 4 semesters.

TALKS

Invited Talks

1. **Ortega, F.**, "Cyber Security – Methods and Latest Attacks", In *Universidad Tecnologica de Honduras*, Invited by Ruben Fernandez, July 28, 2017 (Remote via Skype).

2. **Ortega, F.**, "Towards 3D navigation Using Multi-Touch Displays." In *University of Florida (Computer Science)*. Invited by Dr. Lisa Anthony. Gainesville, FL, 2015.

3. **Ortega, F.**, "3D Navigation with Commodity Devices and the Formalization of Multi-Touch Language." In *University of Leeds*, Colloquium Friday Series. Invited by Dr. Roy Ruddle. Leeds, England, October 18, 2013.

4. **Ortega, F.**, "Motivating Young Minds: Computer Science and Human-Computer Interaction." Guest for Career Day at W.R Thomas Middle School, Miami, FL, 13001 SW 26 Street, MIAMI, FL 33175, May 2nd, 2012.

Invited Panels

5. Williams , T., Moon, D., Paulius, D., **Ortega, F.** (discussants), and Simmonds, D. (discussant), "A Glimpse at the Intelligent Robots of Tomorrow" in *McKnight Mid-Year Research & Writing Conference*, Tampa, FL. Feb 25, 2017.

Conference Talks

6. **Ortega, F.**, " Towards Multi-Modal Interaction with Interactive Paint." In *2018 HCI-International*. Invited session: Spatial User Interaction Beyond the Mouse, Las Vegas, NV, 2018.

7. **Ortega, F.** and Tarre, K., "Gesture Elicitation for 3D Travel via Multi-Touch and Mid-Air Systems for Procedurally Generated Pseudo-Universe." In *2017 IEEE Symposium on 3D User Interfaces (3DUI)*, Los Angeles, CA, March, 2017.

8. **Ortega, F.**, "Towards a 3D Virtual Programming Language to Increase the Number of Women in Computer Science Education." In *2017 IEEE Virtual Reality Workshop on K-12 Embodied Learning through Virtual & Augmented Reality (KELVAR)*, Los Angeles, CA, March 2017.

9. **Ortega, F.**, "Smart Learning Desk: Towards an Interactive Classroom." In *IEEE Virtual Reality 2016 Workshop on K-12 Embodied Learning through Virtual & Augmented Reality*, Greenville, SC, March 19, 2016.

10. **Ortega, F.**, "GyroTouch: Wrist Gyroscope with a Multi-Touch Display." In *HCI International 2015*, Los Angeles, CA, August, 2015.

11. **Ortega, F.**, "PeNTa: Formal Modeling for Multi-Touch Systems Using Petri Nets." In *HCI International 2014*. Crete, Greece, June, 2014.

12. **Ortega, F.**, "Towards 3D Navigation using Multi-Touch." In *McKnight Yearly Fellowship Meeting*, Tampa, FL, 2014.

13. **Ortega, F.**, "Feature Extraction for Multi-Touch." In *McKnight Fellowship* at FIU, Miami, FL, January 23rd, 2014.

Poster Fast-Forwards Talks

14. **Ortega, F.**, "PostureMonitor: Real-Time IMU Wearable Technology to Foster Poise and Health." In *HCI International 2015*. Los Angeles, CA, August 2015.

15. **Ortega, F.**, "TAMGeF: Touch-midAir-Motion Framework for Spatial Input." In *ACM Symposium on Spatial User Interaction*, (fast forward). Los Angeles, CA, August, 2015.

16. **Ortega, F.**, Poster Presentation. "Exploring Modeling Language for Multi-Touch Systems Using Petri Nets." In *ACM Interactive Tabletop and Surfaces* (ITS '13), St. Andrew, Scotland. 2013.

17. **Ortega, F.**, Poster Presentation and Fast-Forward, "Augmenting Multi-Touch with Commodity Devices." In *CM Symposium on Spatial User Interaction* (SUI '13), Los Angeles, CA, 2013.

18. Ortega, F., Poster Presentation and Fast Forward, "Poster: Real-Time Gesture Detection for Multi-Touch Devices." In *IEEE 8th Symposium on 3D User Interfaces* (3DUI '13), Orlando, FL, Mar. 16th, 2013.

Departmental Talks

19. **Ortega, F.**, "3D Navigation via 2D Multi Touch Surfaces." In *FIU CS PhD Student Seminars*, Miami, FL, Apr. 12th, 2012.

20. **Ortega, F.**, "Looking Ahead: A Case for 3D User Interfaces." Guest Speaker for Florida International University, Software Engineering Course, Miami, FL, Mar. 27th, 2012.

21. **Ortega, F.**, "Natural User Interfaces in 3D Navigation." Guest Speaker Florida International University for Computer Graphics, Miami, FL., Feb. 26th, 2012.

SERVICE

External

- Reviewer for *International Journal of Human-Computer Interaction*, Springer, 2018.

- Reviewer for *20th Symposium on Virtual and Augmented Reality (SVR)*, Igauçco, Brazil, 2018.

- Reviewer for *13th International Symposium on Visual Computing*, Las Vegas, NV, 2018.

- Member of Florida Consortium of Metropolitan Research Universities. Representing Florida International University, 2016-2018.

- Reviewer for *ACM Computer-Human Interaction* (CHI' 18), Montréal, Canada, 2018.

- Reviewer for *ACM Richard Tapia Celebration of Diversity in Computing*, 2015–2018.

- Poster Judge Panel for *ACM Richard Tapia Celebration of Diversity in Computing*, 2017–2018.

- Reviewer for *IEEE Transactions on Visualization and Computer Graphics* (TVCG), 2017.

- International Technical Program Committee Member, Conference Papers Track, *IEEE Virtual Reality 2018* (IEEE VR '18), Reutlingen, Germany. 2018.

- Technical Program Committee Member, *ACM Symposium on Spatial User Interaction* (SUI '18), Brighton, UK, 2018.

- Primary reviewer for *ACM Symposium on 3D User Interfaces* (3DUI '17). 2017.

- Primary reviewer for *ACM International Conference on Interactive Surfaces and Spaces* (ISS '17), Brighton, UK, 2017.

- Primary reviewer for, *ACM Symposium on Spatial User Interaction* (SUI '18), Berlin, Germany, 2018.

- Primary reviewer for, *ACM Symposium on Spatial User Interaction* (SUI '17), Brighton, UK, 2017.

- Technical Program Committee Member, *ACM International Conference on Interactive Surfaces and Spaces* (ISS '17), Brighton, UK, 2017.

- Co-Organizer Committee Member, *IEEE VR Second Workshop on K-12 Embodied Learning through Virtual & Augmented Reality* (KELVAR '17), Los Angeles, CA, 2017.

- Co-Organizer Committee Member, *IEEE VR Third Workshop on K-12 Embodied Learning through Virtual & Augmented Reality* (KELVAR '18), Los Angeles, CA, 2017.

- Session Chair *ACM International Conference on Interactive Surfaces and Spaces* (ISS '17), Brighton, UK, 2017.

- Session chair, 3D Interaction, *IEEE VR 3DUI, ACM Symposium on 3D User Interfaces*, (3DUI '17). 2017.

- Technical Program Committee Member, *ACM Symposium on Spatial User Interaction* (SUI '17), Brighton, UK, 2017.

- Publicity Co-chair, *ACM Symposium on Spatial User Interaction* (SUI '17), Brighton, UK, 2017.

- Technical Program Committee Member, *ACM Symposium on 3D User Interfaces* (3DUI '17), Los Angeles, CA, 2017.

- Publicity Co-chair, *ACM Symposium on 3D User Interfaces* (3DUI '17), Los Angeles, CA, 2017.

- Technical Program Committee Member, *ACM Symposium on Spatial User Interaction* (SUI '16), Tokyo, Japan, 2016.

- Publicity Co-chair, *ACM Symposium on Spatial User Interaction* (SUI '16), Tokyo, Japan, 2016.

- Primary reviewer for *ACM Symposium on Spatial User Interaction* (SUI '16).

- Reviewer for *ACM Symposium on Spatial User Interaction* (SUI '16).

- Reviewer for *IEEE Sensors Journal*, 2014-2016.

- Reviewer for *IEEE Journal of Biomedical and Health Informatics*, 2014.

Internal

- FIU Beyond 2020 program, working panel to proposed how to increase doctoral and post-doc students, 2016.

- Programming Workshop for capstone projects (C++, C), hosted by OpenHID Labs. 2015-2016.

- Java Workshop for Electrical and Computing Engineering (5 sessions). 2013.

- Carnegie Doctoral Program Self-Studies and Strategic Planning with faculty and Ph.D. students working group, 2009.

RESEARCH INTERESTS

My research interests include Human-Computer Interaction, Gesture Elicitation, Gesture Recognition, 3D User Interfaces, 3D Navigation, 3D Interaction, Multi-Modal Interaction, and Input Technologies, and Virtual Environments.

Additional interests include the areas of Augmented Reality, Virtual Reality, Affective Computing, Computer Graphics, Software Design, Networking, Cyber Security, and Machine Learning.

RESEARCH PROJECTS

- Multi-Modal 3D Gesture Recognition, (Fall 2018 – Present).

- Interactive Gesture Recognition: A Circular Fashion, (Spring 2014 – Present).

- 3D Navigation: User Studies and Gesture Elicitation, (Spring 2012 – Present).

- CS Education: Increase Interest of non-CS Women using Virtual and Augmented Reality games and education tools, (Spring 2017 – Present)

- **Modeling Users for 3D User Interfaces**, (Spring 2017 – Present).

- **Multi-Touch Interaction and Input Techniques**, (Spring 2011 – Present).

- Motion + BioSensors for User Interaction, (Fall 2016 – present).

- PeNTa: Formal Modeling for Multi-Touch Systems Using Petri Net, (Spring 2013 – Spring 2015).

TEACHING EXPERIENCE

Colorado State University

- **Instructor.** CS 464 – Principles of Human-Computer Interaction: Spring 2019

- **Instructor.** CS 457 – Computer Networks and the Internet: Fall 2018.

Florida International University

- **Supervised Research Instructor.** CIS 5910: Summer 2018 (one student), Spring 2018 (three students), Fall 2018 (one student), Summer 2017 (three students).

- **Instructor.** CNT 4713 – Net-Centric Computing: Summer 2018 (online), Spring 2018 (three sections, one of them online), Spring 2017 (two sections).

- **Instructor.** COP 4005 – Windows Programming for IT: Spring 2018 (online).

- **Instructor.** IDS 3917 (Junior), IDS 4818 (Senior) – Vertically Integrated Projects (Capstone): Spring 2018, Fall 2017, Summer 2017, Spring 2017, Fall 2016.

- **Instructor.** IDS 2917 (Sophomore) - Vertically Integrated Projects: Spring 2018.

- **Instructor.** COP 4610 – Operating System Principles: Fall 2017, Fall 2016 (two sections).

- **Instructor.** COP 5725 – Principles of RDBMS (graduate): Fall 2017, Spring 2016 (co-instructor).

- **Instructor.** COP 4338 – Programming III (C language): Summer 2017, Summer 2016, Summer 2015 (C/C++), Spring 2015

- **Instructor.** COP 3337 – Programming II (Java): Summer 2017.

- **Instructor.** IDS 5993 - Vertically Integrated Projects Graduate: Spring 2017.

- **Instructor.** ECE 6803 – Advanced Digital Forensics (graduate): Spring 2017 (FEEDS online only), Spring 2016, Spring 2015.

- **Instructor.** ECE 4802 – Digital Forensics: Spring 2017 (FEEDS online and class), Spring 2016, Spring 2015.

- **Instructor.** COP 4610 – Operating System Principles (two sections): Fall 2016.

- **Instructor.** CNT 5416 – Practical Applied Security (graduate): Fall 2016.

- **Instructor.** TCN-6430 – Network Management and Control Standards (graduate). Fall 2016.

- **Instructor.** COP 4813 – Web Application Programming: Fall 2015 (ASP.NET C#), Spring 2016 (node.js).

- **Instructor.** ECE 6803 – Advanced Digital Forensics (graduate – fully online): Summer 2017,Summer 2016, Summer 2015.

- **Instructor.** EEL 5807 – Advanced Ethical Hacking (graduate – feeds online): Summer 2016, Summer 2015.

- **Instructor.** CGS 4854 – Website Management and Construction: Summer 2012 (Java).

- **Teaching Assistant.** COP 2210L – Programming I (Java): Spring 2012, Fall 2011, Summer 2011, Spring 2011, Fall 2010, Summer 2010.

- **Teaching Assistant.** CGS 2060L – Introduction to Microcomputers: Spring 2010.

- **Teaching Assistant.** CAP 5602 – Introduction to Artificial Intelligence: Spring 2009.

TEACHING AREAS

Beyond my area of expertise, I'm prepared to teach the majority of Computer Science Courses at undergraduate and graduate level, including: Human-Computer Interaction, 3D User Interfaces, Virtual and Augmented Reality, Operating Systems, Databases, Programming, Data Structures, Fundamentals, Networking, Cyber Security, Software Engineering, and Capstone projects, among others.

MENTORING EXPERIENCE

0.0.1 Ph.D. Directed Research

- Adam Williams, Ph.D. student, Computer Science, CSU, Fall 2018 – Present.

0.0.2 Master Thesis Directed Research

- Aditya Raikwar, M.S. candidate, Computer Science, CSU, Fall 2018 – Present.

Directed Non-Thesis Research

- Katherine Tarre, M.S. candidate Statistics, Spring 2017 – Present.
- Katherine Tarre, B.S. Statistics, Summer 2016 – December 2016 .
- Cristina Villaroel, B.S., Computer Science, Fall 2017– Present
- Seidan Jamides, B.S., Computer Science, Summer 2017 – Present.
- Pablo Mueller, B.S., Computer Science, Summer 2017 – Present
- Jason Garcia, B.S., Computer Science, Spring 2018 – Present
- Joseph Medina, B.S., Computer Science, Summer 2018 – Present
- Arelys Alvarez, B.S., Computer Science, Summer 2018 – Present
- Fidel Hernandes, B.S., Computer Science, Summer 2018 – Present
- Vanesa Perez, B.S., Computer Science, Summer 2018 – Present
- Catherine Angelini, B.S., Computer Science, Spring 2018– Present
- Ciana Rogers, B.S., Computer Science, Spring 2018 – Present
- Andy Pujol, B.S., Computer Science, Summer 2018 – Present
- Luis Averhoff, B.S., Computer Science, Fall 2017 – Present
- Mathew Kress, B.S., Electrical Engineering, Fall 2016 – Present
- Lukas Borges, B.S. candidate,Computer Science, Summer 2016 – Fall 2017.
- Jules Calella, B.S. candidate, in Electrical Engineering, Fall 2015 – Spring 2016.
- Jules Calella, M.S. candidate, in Electrical Engineering, Fall 2016 – Spring 2018.
- Ruben Balcazar, M.S., Computer Science, Summer 2015 – Fall 2017. First job: Ultimate Software, as Software Developer.
- Alain Galvan, B.S., Computer Science, Spring 2015 – Summer 2017. First job: Marmoset (creator of Marmoset Toolbag) as Computer Graphics Developer.
- Jonathan Bernal, B.S. , Computer Engineering, Summer 2016 – Summer 2017.
- Jason-Lee Thomas, B.S., Computer Engineering, Summer 2015 – Fall 2016. First job: Citrix as Senior Software Developer.

General

- Capstone Senior Project, Computer Science, Spring 2015 - Present – Mentored over 30 students.

- Capstone Senior Design, Electrical and Computer Engineering, Spring 2015 - Present – Mentored over 40 students.

- Independent Studies, Summer 2016.

- Honors College Research, Fall 2015 – Spring 2017.

- VIP Supplemental Team, Spring 2016-Summer 2016 – Mentored 15 students.

LANGUAGES

Proficient in English and Spanish.

ACADEMIC AFFILIATIONS

- Association for Computing Machinery (ACM) Professional Member. 2006 – Present.

DEMOGRAPHICS

Nationalities: U.S Citizen, Chilean Citizen.

Ethnicity: Hispanic.

REFERENCES

- Dr. Armando Barreto, Professor, Dept. of Electrical and Computer Engineering. 10555 W. Flagler St., EC-3981, Miami, FL. 33174. Phone: (305) 348-3711 – email: barretoa@fiu.edu.

- Dr. Naphtali D. Rishe, Professor, School of Computing and Information Sciences. 11200 SW 8th St, ECS-243, Miami, FL. 33199. (305) 348-1706 – email: ndr@acm.org.

- Dr. Peter Clarke, Associate Professor, School of Computing and Information Sciences. 11200 SW 8th St, ECS-212, Miami, FL. 33199. Phone: (305) 348-2440 – email: clarkep@cs.fiu.edu.