Regis Kopper

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Appointments

- Assistant Professor of Computer Science, Iowa State University (August 2024–present)
- Adjunc Assistant Professor of Computer Science, University of North Carolina at Greensboro (August 2024–present)
- Assistant Professor of Computer Science, University of North Carolina at Greensboro (August 2019–July 2024)
- Adjunct Assistant Professor of Mechanical Engineering and Materials Science, Duke University (August 2019–May 2022)
- Assistant Research Professor of Mechanical Engineering and Materials Science, Duke University (October 2015–July 2019)
- Assistant Research Professor of Computer Science, Duke University (July 2016–July 2019)
- Core Graduate Faculty, Computational Media Arts and Cultures Program, Duke University (August 2016–July 2019)
- Director, Duke immersive Virtual Environment (DiVE), Duke University (December 2012–July 2019)
- Research Scientist, Pratt School of Engineering, Duke University (December 2012–October 2015)
- Post-Doctoral Associate, University of Florida (June-2011–December 2012)

Education

Ph.D. Computer Science, College of Engineering, Virginia Tech. 2011

- Thesis: Understanding and Improving Distal Pointing Interaction
- Thesis Advisor: Dr. Doug A. Bowman, Virginia Tech
- Thesis Committee: Dr. Ravin Balakrishnan, Dr. Chris North, Dr. D. Scott McCrickard, Dr. Deborah Tatar

Graduate Certificate in Human-Computer Interaction, Virginia Tech. 2010

M.S. Computer Science, Pontifical Catholic University, Porto Alegre, Brazil. 2006

- Master Thesis Title: Project and Evaluation of Navigation Techniques for Multiscale Virtual Environments (in Portuguese)
- Did part of the research work as a Visiting Scholar at Virginia Tech from January-August 2005
- Research paper published and presented at IEEE Virtual Reality 2006 conference

B.A. Computer Science, Pontifical Catholic University, Porto Alegre, Brazil. 2003

- Graduation Thesis Title: Project and Development of Touch Generation Devices (in Portuguese)

Research Interests

- Extended reality and virtual environments
- Human-computer interaction
- Virtual reality training and simulation
- Three-dimensional (3D) user interfaces
- Extended reality user experience
- Virtual human interaction
- 3D Interaction techniques
- Models of human motor behavior

Honors and Awards

- Winner, 3D User Interfaces Grand Prize at the 2023 IEEE Virtual Reality Conference.
- Winner, best research demo award at the 2020 IEEE Virtual Reality Conference.
- Winner, honorable mention for best poster award at 2016 IEEE Virtual Reality Conference.
- Research Impact in Human-Computer Interaction Award. Presented by the Center for Human-Computer Interaction, Virginia Tech. October, 2015.
- Winner, best paper award at the 2011 IEEE 3DUI Symposium.
- Winner, best student poster award at the 2011 Human Systems Integration Symposium.
- Member of the winning team of the first 3D User Interfaces Grand Prize, held during the 2010 IEEE 3DUI Symposium.
- Winner, honorable mention for best paper award at 2009 JVRC.
- Recipient of scholarship from the Brazilian National Science and Technology Development Council (CNPq) that covered tuition and allowances during Master of Science study.

Funding

I have a total lifetime collaborative funding support as investigator of ∼**$5.3 Million**, of which I was directly responsible to manage ∼**$2.15 Million**. Since I became a tenure-track faculty member (August, 2019), I have been PI or Co-PI/Co-I in federal grants amounting to ∼**$2.19 Million**, of which I was directly responsible to manage ∼**$1.13 Million**. As a tenure-track faculty member, the amount of funding I have received averages ∼**$750K per year** in total costs, with an average of ∼**$381K per year** which I am directly responsible to manage.

Current Grant Support

3. 2022–2025, National Institute of Standards and Technology, Regis Kopper (Role: lead PI), "FirstModulAR: Designing and Integrating Augmented Reality User Interface Modules for First Responders.", $1,799,040 (responsible for $910,738)

2. 2022–2025, UNCG Regis Kopper (Role: co-I), Collaborative Project (PI Asha Kutty, UNCG) "Racial Reconciliation and the Design Studio: Creating Pathways and Partnerships between Design, Virtual Reality and Social Justice.", $16,000

1. 2021–2024, National Archives, Regis Kopper (Role: co-I), Collaborative project (PI Tekla Johnson, JCSU) "Augmented Reality Landscapes: African American Urbanism", $194,938 (responsible for $18,500)

Previous Grant Support

20. 2022–2023, Luso-American Development Foundation, Regis Kopper (Role: co-PI), Collaborative Project (PI Joaquim Jorge, University of Lisbon) "US/Portugal Partnership on Extended Reality and Artificial Intelligence toward Accessible and Diverse Healthcare Training and Delivery.", 25,000 €

19. 2021–2023, National Institute of Standards and Technology, Regis Kopper (Role: lead PI), "Validation and Demonstration of a Customizable Virtual Realty-Based Traffic Stop Simulation for Training and Practice with the Hillsborough Police Department.", $198,561

18. 2021–2023, NextGen Interactions, Regis Kopper (Role: sole PI), "Evaluation of Public Safety Virtual Reality Physical Interfaces', $8,015

17. 2021–2022, City of Greensboro Catalizing Creativity Grant, Regis Kopper (Role: co-I), Collaborative project (PI Asha Kutty) "Virtual Magnolia House", $3,667 (responsible for $3,500)

16. 2018–2022, National Institute of Standards and Technology, Regis Kopper (Role: sole PI), "Design, Prototyping and Evaluation of Next Generation Public Safety User Interfaces", $599,632

15. 2020–2021, UNCG Faculty First Awards, Regis Kopper (Role: sole PI), "Design and Preliminary Evaluation of a Tool for Diagnostics and Training through Video-Based Mixed Reality Telepresence", $5,000

14. 2019–2020, Bass Connections Award, Regis Kopper (Role: co-I), Collaborative project (PI Maurizio Forte), "Smart Archaeology: New Developments and Research Questions", $20,000

13. 2018–2019, American Association of Neurological Surgeons, Regis Kopper (Role: mentor), Collaborative project (PI Patrick Codd), "Augmented Reality Assisted Placement of External Ventricular Drain", $10,000

12. 2018–2019, Bass Connections Award, Regis Kopper (Role: co-I), Collaborative project (PI Maurizio Forte), "Smart Archaeology", $20,000

11. 2017–2019, US-Ignite Ignite NC Reverse Pitch Grand Prize Winner, Regis Kopper (Role: sole PI), "PanoVR–Collaborative 360° Video Explorer", $19,000 + $120,000 in IBM Cloud Credits

10. 2016–2017, Duke Digital Initiative (DDI) and US-Ignite Smart Gigabit Communities (SGC), Regis Kopper (Role: PI), "A Prototype Conferencing Tool for 360° Video Analysis", $25,000

9. 2016–2017, Bass Connections Award, Regis Kopper (Role: co-I), Collaborative project (PI Maurizio Forte), "Digital Cities and Poly-Sensing Environments", $22,500

8. 2015–2016, FAPESP (Brazil), Regis Kopper (Role: co-I), Multi-institutional collaborative project (PI Marcelo Zuffo), "CyberArchaeology - Virtual Reality and E-science meet Archaeology", $17,238.50 + R$69,346.25

7. 2014–2016, National Science Foundation MRI 1428681, Regis Kopper (Role: PI), Collaborative project with Duke colleagues (Co-I Kevin LaBar and Co-I Silvia Ferrari), $399,720

6. 2012–2015, United States Army Medical Research and Materiel Command W81XWH-12-1-0397, Regis Kopper (Role: co-I), Collaborative project with Duke colleagues (PI Joseph Izatt), "Field Deployable Optical Coherence Tomography for Triage of Ocular Trauma", $1,000,000

5. 2014–2015, Bass Connections Award, Regis Kopper (Role: co-I), Collaborative project (PI Maurizio Forte), "Digital Archaeological and Historic Landscapes: Laboratory and Fieldwork", $19,000

4. 2013–2014, Bass Connections Award, Regis Kopper (Role: co-I), Collaborative project (PI Maurizio Forte), "The Digital Landscape", $19,500

3. 2013–2014, Duke University Pratt School of Engineering Seed Grant, Regis Kopper (Role: co-I), Seed funding with Duke colleagues (PI Marc Sommers), "Monkey DiVE", $16,500

2. 2009–2014, National Institutes of Health R01 DA027802, Regis Kopper (Role: co-I), Collaborative project with Duke colleagues (PI Kevin LaBar): "Brain imaging studies of negative reinforcement in humans", $2,033,168

1. 2013, National Institute for Occupational Safety and Health 00HCCMED-2013-60677, Regis Kopper (Role: sole PI), Contract: "Comparative Evaluation of Input Devices for Virtual Reality Mine Simulation", $30,205

Publications

Book Chapters:

3. Doug A. Bowman, Felipe Bacim, and **Regis Kopper**. "VR Developer Gems". In: ed. by William R. Sherman. CRC Press, 2019. Chap. Effortless 3D Selection through Progressive Refinement.
2. Ryan P. McMahan, **Regis Kopper**, and Doug A. Bowman. "Handbook of Virtual Environments: Design, Implementation and Applications". In: ed. by Kelly S. Hale and Kay M. Stanney. 2nd ed. CRC Press, 2014. Chap. 12: Principles for Designing Effective 3D Interaction Techniques, pp. 285–312.
1. **Regis Kopper**, Marcio S. Pinho, and Mauro Charão. "Virtual Environments: Design and Implementation". In: ed. by Alexandre Cardoso, Cesar Augusto Camilo Teixeira, and Edgard Lamounier Júnior. In Portuguese. SBC - Brazilian Computing Society, 2003. Chap. Development of Virtual Reality Applications, pp. 79–113.

Edited Volumes:

5. Daniela Gorski Trevisan, **Regis Kopper**, and Victor Adriel de Jesus Oliveira. "Foreword to the Special Section on the 2021 Symposium on Virtual and Augmented Reality (SVR 2021)". In: *Computers & Graphics* 102 (2022), A12–A13. ISSN: 0097-8493. DOI: 10.1016/j.cag.2021.11.008.
4. **Regis Kopper**, Gerd Bruder, Pablo Figueroa, Martin Hachet, Tobias Langlotz, Luciana Nedel, and Lili Wang, eds. *2021 IEEE Conference on Virtual Reality and 3D User Interfaces (VR)*. Los Alamitos, CA, USA: IEEE Computer Society, Mar. 2021.
3. Ferran Argelaguet, Gerd Bruder, **Regis Kopper**, Marc Erich Latoschik, Tabitha Peck, Christian Sandor, and Xubo Yang, eds. *2020 IEEE Conference on Virtual Reality and 3D User Interfaces (VR)*. Los Alamitos, CA, USA: IEEE Computer Society, Mar. 2020.
2. George Bebis, Richard Boyle, Bahram Parvin, Darko Koracin, Ioannis Pavlidis, Rogério Schmidt Feris, Tim McGraw, Mark Elendt, **Regis Kopper**, Eric D. Ragan, Zhao Ye, and Gunther H. Weber, eds. *Advances in Visual Computing - 11th International Symposium, ISVC 2015, Las Vegas, NV, USA, December 14-16, 2015, Proceedings, Part I*. Vol. 9474. Lecture Notes in Computer Science. Springer, 2015. ISBN: 978-3-319-27862-9. DOI: 10.1007/978-3-319-27863-6.
1. George Bebis, Richard Boyle, Bahram Parvin, Darko Koracin, Ioannis Pavlidis, Rogério Schmidt Feris, Tim McGraw, Mark Elendt, **Regis Kopper**, Eric D. Ragan, Zhao Ye, and Gunther H. Weber, eds. *Advances in Visual Computing - 11th International Symposium, ISVC 2015, Las Vegas, NV, USA, December 14-16, 2015, Proceedings, Part II*. Vol. 9475. Lecture Notes in Computer Science. Springer, 2015. ISBN: 978-3-319-27862-9. DOI: 10.1007/978-3-319-27863-6.

Refereed Journal Articles:

21. Basheerah Enahora, Gina L Tripicchio, **Regis Kopper**, Omari L Dyson, Jeffrey Labban, Lenka H Shriver, Lauren A Haldeman, Christopher K Rhea, and Jared T McGuirt. "Assessment of Interest in a Virtual Avatar-Based Nutrition Education Program among Youth-Serving Community Partners". In: *Journal of Nutrition Education and Behavior* (2024).

20. Jared T McGuirt, Elizabeth Anderson Steeves, Jeffrey D Labban, Angela F Pfammatter, Kendall Allen, **Regis Kopper**, Yingcheng Sun, and Alison Gustafson. "Multi-Method Formative Evaluation of a Digital Online Grocery Shopping Assistant among Special Supplemental Nutrition Program for Women, Infants, and Children Participants". In: *Journal of Nutrition Education and Behavior* (2024).

19. Zekun Cao, Jeronimo Grandi, and **Regis Kopper**. "Granulated Rest Frames Outperform Field of View Restrictors on Visual Search Performance". In: *Frontiers in Virtual Reality* 2 (2021), p. 63. ISSN: 2673-4192. DOI: 10.3389/frvir.2021.604889.

18. Sicong Liu, Jillian M Clements, Elayna P Kirsch, Hrishikesh M Rao, David J Zielinski, Yvonne Lu, Boyla O Mainsah, Nicholas D Potter, Marc A Sommer, **Regis Kopper**, and Lawrence G. Appelbaum. "Psychophysiological Markers of Performance and Learning during Simulated Marksmanship in Immersive Virtual Reality". In: *Journal of Cognitive Neuroscience* 33.7 (2021), pp. 1253–1270.

17. Vinicius Souza, Anderson Maciel, Luciana Nedel, and **Regis Kopper**. "Measuring Presence in Virtual Environments: A Survey". In: *Acm Computing Surveys* 54.8 (Oct. 2021). ISSN: 0360-0300. DOI: 10.1145/3466817.

16. Yunhan Wang and **Regis Kopper**. "Efficient and Accurate Object 3D Selection with Eye Tracking-Based Progressive Refinement". In: *Frontiers in Virtual Reality* 2 (2021), p. 78. ISSN: 2673-4192. DOI: 10.3389/frvir.2021.607165.

15. Eduardo Gabriel Ueiroz Palmeira, Victor Biagiotti Saint Martin, Igor Andrade Moraes, **Regis Kopper**, Edgard Afonso Lamounier Júnior, and Alexndre Cardoso. "O Uncanny Valley Das Mãos Virtuais Em Aplicações de Realidade Virtual Imersiva: Uma Revisão Sistemática Da Literatura". In: *Revista Ibérica de Sistemas e Tecnologias de Informação* E31 (2020), pp. 497–512.

14. Bettina Olk, Alina Dinu, David J. Zielinski, and **Regis Kopper**. "Measuring Visual Search and Distraction in Immersive Virtual Reality". In: *Open Science* 5.5 (2018). DOI: 10.1098/rsos.172331. eprint: http://rsos.royalsocietypublishing.org/content/5/5/172331.full.pdf.

13. Hrishikesh M. Rao, Rajan Khanna, David J. Zielinski, Yvonne Lu, Jillian M. Clements, Nicholas D. Potter, Marc A. Sommer, **Regis Kopper**, and Lawrence G. Appelbaum. "Sensorimotor Learning during a Marksmanship Task in Immersive Virtual Reality". In: *Frontiers in Psychology* 9 (2018), p. 58. ISSN: 1664-1078. DOI: 10.3389/fpsyg.2018.00058.

12. Nicola Lercari, Emmanuel Shiferaw, Maurizio Forte, and **Regis Kopper**. "Immersive Visualization and Curation of Archaeological Heritage Data: Çatalhöyük and the Dig@ IT App". In: *Journal of Archaeological Method and Theory* (2017), pp. 1–25.

11. Rajvi Mehta, Derek Nankivil, David J. Zielinski, Gar Waterman, Brenton Keller, Alexander T. Limkakeng Jr, **Regis Kopper**, Joseph A. Izatt, and Anthony N. Kuo. "Wireless, Web-Based Interactive Control of Optical Coherence Tomography with Mobile Devices". In: *Translational Vision Science & Technology* 6.1 (2017), p. 5. DOI: 10.1167/tvst.6.1.5.

10. Eric Ragan, Doug Bowman, **Regis Kopper**, Cheryl Stinson, Siroberto Scerbo, and Ryan P McMahan. "Effects of Field of View and Visual Complexity on Virtual Reality Training Effectiveness for a Visual Scanning Task". In: *Visualization and Computer Graphics, IEEE Transactions on* PP.99 (2015), pp. 1–1. ISSN: 1077-2626. DOI: 10.1109/TVCG.2015.2403312.

9. Teresa R. Johnson, Rebecca Lyons, **Regis Kopper**, Kyle J. Johnsen, Benjamin C. Lok, and Juan C. Cendan. "Virtual Patient Simulations and Optimal Social Learning Context: A Replication of an Aptitude-Treatment Interaction Effect". In: *Medical Teacher* 36.6 (2014), pp. 486–494. DOI: 10.3109/0142159X.2014.890702. eprint: http://dx.doi.org/10.3109/0142159X.2014.890702.

8. Felipe Bacim, **Regis Kopper**, and Doug A. Bowman. "Design and Evaluation of 3D Selection Techniques Based on Progressive Refinement". In: *International Journal of Human-Computer Studies* 71.7–8 (2013), pp. 785–802. ISSN: 1071-5819. DOI: http://dx.doi.org/10.1016/j.ijhcs.2013.03.003.

7. Joon Hao Chuah, Andrew Robb, Casey White, Adam Wendling, Samsun Lampotang, **Regis Kopper**, and Benjamin Lok. "Exploring Agent Physicality and Social Presence for Medical Team Training". In: *Presence: Teleoperators and Virtual Environments* 22.2 (2013), pp. 141–170. DOI: 10.1162/PRES{_}a{_}00145.

6. Eric D. Ragan, **Regis Kopper**, Philip Schuchardt, and Doug A. Bowman. "Studying the Effects of Stereo, Head Tracking, and Field of Regard on a Small-Scale Spatial Judgment Task". In: *Visualization and Computer Graphics, IEEE Transactions on* 19.5 (2013), pp. 886–896. ISSN: 1077-2626. DOI: 10.1109/TVCG.2012.163.

5. Andrew Robb, **Regis Kopper**, Ravi Ambani, Farda Qayyum, David Lind, Li-Ming Su, and Benjamin Lok. "Leveraging Virtual Humans to Effectively Prepare Learners for Stressful Interpersonal Experiences". In: *Visualization and Computer Graphics, IEEE Transactions on* 19.4 (2013), pp. 662–670.

4. Teresa R. Johnson, Rebecca Lyons, Joon Hao Chuah, **Regis Kopper**, Benjamin C. Lok, and Juan C. Cendan. "Optimal Learning in a Virtual Patient Simulation of Cranial Nerve Palsies: The Interaction between Social Learning Context and Student Aptitude". In: *Medical Teacher* 35.1 (2012), e899–e907. DOI: 10.3109/0142159X.2012.714884.

3. Pablo Figueroa, Yoshifumi Kitamura, Sebastien Kuntz, Lode Vanacken, Steven Maesen, Tom De Weyer, Sofie Notelaers, Johanna Renny Octavia, Anastasiia Beznosyk, Karin Coninx, Felipe Bacim, **Regis Kopper**, Anamary Leal, Tao Ni, and Doug A. Bowman. "3DUI 2010 Contest Grand Prize Winners". In: *IEEE Computer Graphics and Applications* 30 (2010), pp. 86–96. ISSN: 0272-1716. DOI: http://doi.ieeecomputersociety.org/10.1109/MCG.2010.108.

2. **Regis Kopper**, Doug A. Bowman, Mara G. Silva, and Ryan P. McMahan. "A Human Motor Behavior Model for Distal Pointing Tasks". In: *International Journal of Human-Computer Studies* 68.10 (2010), pp. 603–615. DOI: DOI:10.1016/j.ijhcs.2010.05.001.

1. Eric D Ragan, Ajith Sowndararajan, **Regis Kopper**, and Doug A Bowman. "The Effects of Higher Levels of Immersion on Procedure Memorization Performance and Implications for Educational Virtual Environments". In: *Presence: Teleoperators and Virtual Environments* (2010).

Refereed Conference Proceedings:

22. Zekun Cao and **Regis Kopper**. "Real-Time Viewport-Aware Optical Flow Estimation in 360-Degree Videos for Visually-Induced Motion Sickness Mitigation". In: *Proceedings of the 25th Symposium on Virtual and Augmented Reality*. Svr '23. New York, NY, USA: Association for Computing Machinery, 2023, pp. 210–218. ISBN: 9798400709432. DOI: 10.1145/3625008.3625051.
21. Jeronimo G Grandi, Zekun Cao, Dalton Costa, and **Regis Kopper**. "Assessing the Impact of Alert Modalities on User Performance and Comprehension in Controlled Workload Conditions". In: *Proceedings of the 2023 ACM Symposium on Spatial User Interaction*. Sui '23. New York, NY, USA: Association for Computing Machinery, 2023. ISBN: 9798400702815. DOI: 10.1145/3607822.3614545.
20. Catarina Moreira, Diogo Miguel Alvito, Sandra Costa Sousa, Isabel Maria Gomes Blanco Nobre, Chun Ouyang, **Regis Kopper**, Andrew Duchowski, and Joaquim Jorge. "Comparing Visual Search Patterns in Chest X-Ray Diagnostics". In: *Proceedings of the 2023 Symposium on Eye Tracking Research and Applications*. Etra '23. New York, NY, USA: Association for Computing Machinery, 2023. ISBN: 9798400701504. DOI: 10.1145/3588015.3588403.
19. Eduardo Palmeira, Igor Moraes, Eduardo Telles, Victor Martin, Victor Goncalves, **Regis Kopper**, Edgard Lamounier, and Alexndre Cardoso. "One-Handed Text Entry in Mobile-Based Virtual Reality: An Ambiguous Keyboard Technique". In: *Advances in Usability, User Experience, Wearable and Assistive Technology: Proceedings of the AHFE 2021 Virtual Conferences on Usability and User Experience, Human Factors and Wearable Technologies, Human Factors in Virtual Environments and Game Design, and Human Factors and Assistive Technology, July 25–29, 2021, USA*. Springer, 2021.
18. Vinicius Souza, Anderson Maciel, Luciana Nedel, **Regis Kopper**, Klaus Loges, and Eliane Schlemer. "The Effect of Virtual Reality on Knowledge Transfer and Retention in Collaborative Group-Based Learning for Neuroanatomy Students". In: *22nd Symposium on Virtual and Augmented Reality (SVR)*. 2020.
17. Zekun Cao, Jason Jerald, and **Regis Kopper**. "Visually-Induced Motion Sickness Reduction via Static and Dynamic Rest Frames". In: *Proceedings of the 2018 Conference on Virtual Reality and 3D User Interfaces*. 2018.
16. Jillian M. Clements, **Regis Kopper**, David J. Zielinski, Hrishikesh Rao, Marc A. Sommer, Elayna Kirsch, Boyla O. Mainsah, Leslie M. Collins, and Lawrence G. Appelbaum. "Neurophysiology of Visual-Motor Learning during a Simulated Marksmanship Task in Immersive Virtual Reality". In: *Proceedings of the 2018 Conference on Virtual Reality and 3D User Interfaces*. 2018.
15. Vinicius Costa de Souza, Luciana Nedel, **Regis Kopper**, Anderson Maciel, and Leonardo Tagliaro. "The Effects of Physiologically-Adaptive Virtual Environment on User's Sense of Presence". In: *2018 20th Symposium on Virtual and Augmented Reality (SVR)*. IEEE, 2018, pp. 133–142.
14. Asma Naz, **Regis Kopper**, Ryan P McMahan, and Mihai Nadin. "Emotional Qualities of VR Space". In: *Proceedings of the IEEE Virtual Reality Conference*. IEEE Computer Society, 2017.

13. David J. Zielinski, Derek Nankivil, and **Regis Kopper**. "Specimen Box: A Tangible Interaction Technique for World-Fixed Virtual Reality Displays". In: *3D User Interfaces (3DUI), 2017 IEEE Symposium On*. 2017.

12. David J. Zielinski, Hrishikesh M. Rao, Nicholas D. Potter, Marc A. Sommer, Lawrence G. Appelbaum, and **Regis Kopper**. "Evaluating the Effects of Image Persistence on Dynamic Target Acquisition in Low Frame Rate Virtual Environments". In: *3D User Interfaces (3DUI), 2016 IEEE Symposium On*. 2016.

11. David J. Zielinski, Hrishikesh M. Rao, Marc A. Sommer, and **Regis Kopper**. "Exploring the Effects of Image Persistence in Low Frame Rate Virtual Environments". In: *Proceedings of the IEEE Virtual Reality Conference*. IEEE Computer Society, 2015.

10. Diego J. Rivera-Gutierrez, **Regis Kopper**, Andrea Kleinsmith, Juan Cendan, Glen Finney, and Benjamin Lok. "Exploring Gender Biases with Virtual Patients for High Stakes Interpersonal Skills Training". In: *Intelligent Virtual Agents*. Ed. by Timothy Bickmore, Stacy Marsella, and Candace Sidner. Vol. 8637. Lecture Notes in Computer Science. Springer International Publishing, 2014, pp. 385–396. ISBN: 978-3-319-09766-4. DOI: 10.1007/978-3-319-09767-1_50.

9. David Zielinski, **Regis Kopper**, Ryan P. McMahan, Wenjie Lu, and Silvia Ferrari. "Intercept Tags: Enhancing Intercept-Based Systems". In: *Virtual Reality Software and Technology, 2013 ACM Symposium On*. 2013.

8. Doug A Bowman, Cheryl Stinson, Eric D Ragan, Siroberto Scerbo, Tobias Höllerer, Cha Lee, Ryan P McMahan, and **Regis Kopper**. "Evaluating Effectiveness in Virtual Environments with MR Simulation". In: *The Interservice/Industry Training, Simulation & Education Conference (I/ITSEC)*. Vol. 2012. NTSA, 2012.

7. Joon Hao Chuah, Andrew Robb, Casey White, Adam Wendling, Samsun Lampotang, **Regis Kopper**, and Benjamin Lok. "Increasing Agent Physicality to Raise Social Presence and Elicit Realistic Behavior". In: *Virtual Reality (VR), 2012 IEEE*. IEEE, 2012, pp. 19–22.

6. Vaishnavi Krishnan, Adriana Foster, **Regis Kopper**, and Benjamin Lok. "Virtual Human Personality Masks: A Human Computation Approach to Modeling Verbal Personalities in Virtual Humans". In: *Intelligent Virtual Agents*. Springer, 2012, pp. 146–152.

5. **Regis Kopper**, Felipe Bacim, and Doug A. Bowman. "Rapid and Accurate 3D Selection by Progressive Refinement". In: *3D User Interfaces (3DUI), 2011 IEEE Symposium On*. Mar. 2011, pp. 67–74. DOI: 10.1109/3DUI.2011.5759219.

4. Doug Bowman, Ajith Sowndararajan, Eric Ragan, and **Regis Kopper**. "Higher Levels of Immersion Improve Procedure Memorization Performance". In: *Joint Virtual Reality Conference*. Lyon, France, 2009.

3. **Regis Kopper**, Tao Ni, Doug A. Bowman, and Marcio Pinho. "Design and Evaluation of Navigation Techniques for Multiscale Virtual Environments". In: *VR '06: Proceedings of the IEEE Virtual Reality Conference (VR 2006)*. Washington, DC, USA: IEEE Computer Society, 2006, p. 24. ISBN: 1-4244-0224-7. DOI: http://dx.doi.org/10.1109/VR.2006.47.

2. Rafael Rieder, Felipe Bacim de Araújo, Silva, **Regis Kopper**, Mauro César Charão dos Santos, André Benvenuti Trombetta, and Márcio Serolli Pinho. "An Evaluation of the Use of Tactile Stimuli in a Virtual Environment". In: *Proceedings of the Brazilian Symposium on Virtual Reality*. 2006, In Portuguese.

1. **Regis Kopper**, Mauro C. C. Santos, Daniel Prochnow, Marcio S. Pinho, and Julio C. Lima. "Project and Development of Touch Generation Devices". In: *Proceedings of the Brazilian Symposium on Virtual Reality*. 2004, 65–75. In Portuguese.

Refereed Workshops Papers:

11. Kadir Lofca, Jason Jerald, Dalton Costa, and **Regis Kopper**. "Does Adding Physical Realism to Virtual Reality Training Reduce Time Compression?" In: *2023 IEEE Conference on Virtual Reality and 3D User Interfaces Abstracts and Workshops (VRW)*. 2023, pp. 61–66. DOI: 10.1109/VRW58643.2023.00017.
10. Matheus Negrão, Joaquim Jorge, João Vissoci, **Regis Kopper**, and Anderson Maciel. "Exploring Affordances for AR in Laparoscopy". In: *2023 IEEE Conference on Virtual Reality and 3D User Interfaces Abstracts and Workshops (VRW)*. 2023, pp. 147–151. DOI: 10.1109/VRW58643.2023.00037.
9. João Serras, Anderson Maciel, Soraia Paulo, Andrew Duchowski, **Regis Kopper**, Catarina Moreira, and Joaquim Jorge. "Development of an Immersive Virtual Colonoscopy Viewer for Colon Growths Diagnosis". In: *2023 IEEE Conference on Virtual Reality and 3D User Interfaces Abstracts and Workshops (VRW)*. 2023, pp. 152–155. DOI: 10.1109/VRW58643.2023.00038.
8. Amani Taweel, Joaquim Jorge, Anderson Maciel, João Ricardo Nickenig Vissoci, and **Regis Kopper**. "SURVIVRS: Surround Video-Based Virtual Reality for Surgery Guidance". In: *2023 IEEE Conference on Virtual Reality and 3D User Interfaces Abstracts and Workshops (VRW)*. 2023, pp. 191–195. DOI: 10.1109/VRW58643.2023.00047.
7. Jerônimo G Grandi, Zekun Cao, Mark Ogren, and **Regis Kopper**. "Design and Simulation of Next-Generation Augmented Reality User Interfaces in Virtual Reality". In: *2021 IEEE Conference on Virtual Reality and 3D User Interfaces Abstracts and Workshops (VRW)*. 2021.
6. Rebecca Bennett, David J Zielinski, and **Regis Kopper**. "Comparison of Interactive Environments for the Archaeological Exploration of 3D Landscape Data". In: *3DVis (3dvis), 2014 IEEE VIS International Workshop On*. IEEE, 2014, pp. 67–71.
5. Dennis Lynch, David Borland, **Regis Kopper**, and Tabitha Peck. "Volume Visualization on a WIM: Design Considerations and Planned Evaluations". In: *2nd International Workshop on Immersive Volumetric Interaction*. 2014.
4. David J Zielinski, Ryan P McMahan, Solaiman Shokur, Edgard Morya, and **Regis Kopper**. "Enabling Closed-Source Applications for Virtual Reality via OpenGL Intercept-Based Techniques". In: *Software Engineering and Architectures for Realtime Interactive Systems (SEARIS), 2014 IEEE 7th Workshop On*. IEEE, 2014, pp. 59–64.
3. **Regis Kopper**, Mallory McManamon, Thomas George, and Benjamin Lok. "Interactive Memoirs: Coping with the Imminent Death and Leaving Legacies". In: *CHI '12 Workshop on Memento Mori: Technology Design for the End of Life*. 2012.
2. **Regis Kopper**, Cheryl Stinson, and D Bowman. "Towards an Understanding of the Effects of Amplified Head Rotations". In: *Proceedings of the Workshop on Perceptual Illusions in Virtual Environments* (2011), pp. 10–15.

1. Liane Tarouco, Marie-Christine Julie Mascarenhas Fabre, Rodrigo dos Santos Keller, and **Regis Kopper**. "Visual Collaboration Environments in Education". In: *Proceedings of the XX Brazilian Computer Society Conference/Workshop on Informatics in Education*. 2000, In Portuguese.

Refereed Posters, Extended Abstracts and Abstracts:

33. **Regis Kopper**, Jeronimo Grandi, Erin Argo, Jason Jerald, Rich Bennet, and Connor Shipway. "FirstModulAR: Open-Source Modular Augmented Reality Interfaces for First Responders". In: *2025 IEEE Conference on Virtual Reality and 3D User Interfaces Abstracts and Workshops (VRW)*. IEEE, 2025.
32. Theodore Okamura and **Regis Kopper**. "XR Slate: Swiping and Layout Adjustment for Text Entry". In: *2024 IEEE Conference on Virtual Reality and 3D User Interfaces Abstracts and Workshops (VRW)*. IEEE, 2024, pp. 1025–1026.
31. Jerônimo G Grandi, Jerry Terrell, Kadir Lofca, Carlos Ruizvalencia, and **Regis Kopper**. "A Continuous Authentication Technique for XR Utilizing Time-Based One Time Passwords, Haptics, and Kinetic Activity". In: *2023 IEEE Conference on Virtual Reality and 3D User Interfaces Abstracts and Workshops (VRW)*. 2023, pp. 959–960. DOI: 10.1109/VRW58643.2023.00322.
30. Jared McGuirt, Betsy Anderson Steeves, **Regis Kopper**, Yingcheng Sun, Vamshi Edamadaka, Kendall Allen, and Alison Gustafson. "Rural Online Shopping Assistant (ROSA): Mixed Methods Formative Evaluation with Low-Income Rural Shoppers". In: *Journal of Nutrition Education and Behavior* 55.7 (2023), pp. 87–88.
29. Kadir Lofca, Jason Haskins, Jason Jerald, and **Regis Kopper**. "Studying the Effect of Physical Realism on Time Perception in a HAZMAT VR Simulation". In: *2022 IEEE Conference on Virtual Reality and 3D User Interfaces Abstracts and Workshops (VRW)*. IEEE, 2022, pp. 884–885.
28. Jerônimo G Grandi, Zekun Cao, Mark Ogren, and **Regis Kopper**. "Simulating Next-Generation User Interfaces for Law Enforcement Traffic Stops". In: *2020 IEEE Conference on Virtual Reality and 3D User Interfaces Abstracts and Workshops (VRW)*. IEEE, 2020, pp. 827–828.
27. Jerônimo G Grandi, Mark Ogren, and **Regis Kopper**. "An Approach to Designing next Generation User Interfaces for Public-Safety Organizations". In: *2019 IEEE Conference on Virtual Reality and 3D User Interfaces (VR)*. IEEE, 2019, pp. 944–945.
26. Angelina Chang Liu, Brian Hyun-jong Lee, and **Regis Kopper**. "Towards a Virtual Memory Palace". In: *2019 IEEE Conference on Virtual Reality and 3D User Interfaces (VR)*. IEEE, 2019, pp. 1046–1047.
25. L. Gregory Appelbaum, Jillian Clements, Elayna Kirsch, Hrishikesh M. Rao, Nicholas D. Potter, **Regis Kopper**, and Marc A. Sommer. "Psychophysiology of Visual-Motor Learning during a Simulated Marksmanship Task in Immersive Virtual Reality". In: *Vision Science Society Annual Meeting*. St. Pete Beach, FL., 2018.
24. Yuchen Zhao, Maurizio Forte, and **Regis Kopper**. "VR Touch Museum". In: *2018 IEEE Conference on Virtual Reality and 3D User Interfaces (VR)*. Mar. 2018, pp. 741–742. DOI: 10.1109/VR.2018.8446581.

23. L. Gregory Appelbaum, Jillian Clements, Hrishikesh M. Rao, Rajan Khanna, David J. Zielinski, Yvonne Lu, Kelly Vittatoe, Nicholas D. Potter, **Regis Kopper**, and Marc A. Sommer. "Changes in EEG and Movement Kinematics Accompany Sensorimotor Learning in Immersive Virtual Reality". In: *Cognitive Neuroscience Society, 24th Annual Meeting*. 2017.

22. Eduardo Zilles Borba, Andre Montes, Marcio Almeida, Mario Nagamura, Roseli Lopes, Marcelo Knorich Zuffo, Astolfo Araujo, and **Regis Kopper**. "ArcheoVR: Exploring Itapeva's Archeological Site". In: *Virtual Reality (VR), 2017 IEEE*. IEEE, 2017, pp. 463–464.

21. Eduardo Zilles Borba, Andre Montes, Roseli de Deus Lopes, Marcelo Knorich Zuffo, and **Regis Kopper**. "Itapeva 3D: Being Indiana Jones in Virtual Reality". In: *Virtual Reality (VR), 2017 IEEE*. IEEE, 2017, pp. 361–362.

20. Ana Grasielle Corrêa, Eduardo Zilles Borba, Roseli Lopes, Marcelo Knorich Zuffo, Astolfo Araujo, and **Regis Kopper**. "User Experience Evaluation with Archaeometry Interactive Tools in Virtual Reality Environment". In: *3D User Interfaces (3DUI), 2017 IEEE Symposium On*. IEEE, 2017, pp. 217–218.

19. Andrew Benjamin Cutler, Shervin Rahimpour, Yameng Liu, Nandan Lad, **Regis Kopper**, and Patrick Codd. "Development of Augmented Reality-Based Neuro-Navigation System for Use in External Ventrictilar Drain Placement". In: *Journal of Neurosurgey*. Vol. 126. American Association of Neurological Surgeons, 2017, A1438–A1438.

18. Leonardo Pavanatto Soares, Márcio Sarroglia Pinho, and **Regis Kopper**. "Design and Preliminary Evaluation of an EGO-exocentric Technique for Cooperative Manipulation". In: *3D User Interfaces (3DUI), 2017 IEEE Symposium On*. IEEE, 2017, pp. 203–204.

17. David J. Zielinski, Derek Nankivil, and **Regis Kopper**. "6 Degrees-of-freedom Manipulation with a Transparent, Tangible Object in World-Fixed Virtual Reality Displays". In: *2017 IEEE Virtual Reality (VR)*. Mar. 2017, pp. 221–222. DOI: 10.1109/VR.2017.7892256.

16. L. Gregory Appelbaum, Jillian Clements, Yvonne Lu, Hrishikesh M. Rao, Rajan Khanna, David J. Zielinski, Kelly Vittatoe, Nicholas D. Potter, **Regis Kopper**, and Marc A. Sommer. "Sensorimotor Orienting in Immersive Virtual Reality: EEG Correlates of Skill Learning". In: *Program No. 265.12. 2016 Neuroscience Meeting Planner*. San Diego, CA: Society for Neuroscience. 2016.

15. Eduardo Zilles Borba, Marcio Cabral, Roseli de Deus Lopes, Marcelo Knorich Zuffo, and **Regis Kopper**. "A Fully Immersive Virtual Model to Explore Archaeological Sites". In: *Virtual Reality (VR), 2016 IEEE*. IEEE, 2016, pp. 326–326.

14. Eduardo Zilles Borba, Marcio Cabral, Roseli Lopes, Marcelo Zuffo, and **Regis Kopper**. "VR Model to Explore Archaeological Sites in a Non-Destructive Way". In: *ACM SIGGRAPH 2016 VR Village*. ACM, 2016, p. 23.

13. Rajvi Mehta, Derek Nankivil, David J Zielinski, Gar Waterman, Brenton Keller, Prakruth Adari, **Regis Kopper**, Joseph A Izatt, and Anthony N Kuo. "Remote, Web-Based Interface Control of Handheld Swept Source OCT System for Acute Care Settings". In: *Investigative Ophthalmology & Visual Science* 57.12 (2016).

12. Hrishikesh M. Rao, Rajan Khanna, David J. Zielinski, Yvonne Lu, Nicholas D. Potter, **Regis Kopper**, Marc A. Sommer, and L. Gregory Appelbaum. "Sensorimotor Orienting in Immersive Virtual Reality: Psychophysics of Skill Learning." In: *Program No. 265.11. 2016 Neuroscience Meeting Planner*. San Diego, CA: Society for Neuroscience. 2016.

11. Leonardo Pavanatto Soares, Thomas Volpato de Oliveira, Vicenzo Abichequer Sangalli, Marcio Sarroglia Pinho, and **Regis Kopper**. "Collaborative Hybrid Virtual Environment". In: *2016 IEEE Symposium on 3D User Interfaces (3DUI)*. IEEE, 2016, pp. 283–284.
10. David J. Zielinski, Hrishikesh M. Rao, Nicholas D. Potter, Lawrence G. Appelbaum, and **Regis Kopper**. "Evaluating the Effects of Image Persistence on Dynamic Target Acquisition in Low Frame Rate Virtual Environments". In: *2016 IEEE Virtual Reality Posters*. 2016.
9. Ayana Burkins and **Regis Kopper**. "Wayfinding by Auditory Cues in Virtual Environments". In: *IEEE Virtual Reality Conference Posters*. 2015.
8. Bettina Olk, David Zielinski, and **Regis Kopper**. "Effects of Perceptual Load in Visual Search in Immersive Virtual Reality." In: *Journal of vision* 15.12 (2015), p. 1064.
7. Elizabeth Izatt, Kate Scholberg, and **Regis Kopper**. "Neutrino-KAVE: An Immersive Visualization and Fitting Tool for Neutrino Physics Education". In: *IEEE Virtual Reality Conference Posters*. 2014.
6. Nicola Lercari, Maurizio Forte, Emmanuel Shiferaw, and **Regis Kopper**. "Reshaping Remote Sensing and Virtual Reality at Çatalhöyük". In: *5th International Conference on Remote Sensing in Archaeology*. 2014.
5. Nicola Lercari, Stephanie Matthiesen, David Zielinski, and **Regis Kopper**. "Towards an Immersive Interpretation of Çatalhöyük at DiVE". In: *ASOR Annual Meeting 2014 - San Diego*. American School of Oriental Research, 2014.
4. M. A. L. Nicolelis, S. Shokur, A. Lin, R. C. Moioli, F. L. Brasil, N. Peretti, K. Fast, A. Takigami, E. Morya, G. Cheng, L. Sawaki, **Regis Kopper**, D. Schwarz, S. Gallo, M. Lebedev, S. Joshi, H. Bleuler, and A. Rudolph. "The Walk Again Project: Using a Brain-Machine Interface for Establishing a Bi-Directional Interaction between Paraplegic Subjects and a Lower Limb Exoskeleton". In: *44th society for neuroscience meeting. Washington, DC* (2014).
3. David Zielinski, Brendan Macdonald, and **Regis Kopper**. "Comparative Study of Input Devices for a VR Mine Simulation". In: *IEEE Virtual Reality Conference Posters*. 2014.
2. Nicola Lercari, Maurizio Forte, David Zielinski, **Regis Kopper**, and Rebecca Lai. "Çatalhöyük @ DiVE – Virtual Reconstruction and Immersive Visualization of a Neolithic Building". In: *Proceedings of Digital Heritage 2013*. Marseille, Oct. 2013.
1. Cheryl Stinson, Siroberto Scerbo, Eric Ragan, **Regis Kopper**, and Doug Bowman. "The Effects of Visual Realism on Training Transfer in Immersive Virtual Environments". In: *Poster Presented at the Human Systems Integration Symposium*. 2011.

Refereed Courses:

1. Joaquim Jorge, João Pereira, Anderson Maciel, Catarina Moreira, and **Regis Kopper**. "Approaches and Challenges in XR and AI for Health Applications". In: *SIGGRAPH Asia 2023 Courses* (2023), pp. 1–147.

Preprints and Other Non-refereed Publications:

3. **Regis Kopper** and Doug A. Bowman. "Human Motor Behavior Model for Distant Pointing Tasks". In: *Boaster Paper Presented at the HCIC Conference*. Ed. by HCIC Consortium. Fraser, Colorado, 2009.
2. Tejinder Judge, **Regis Kopper**, Sean Ponce, Mara Silva, and Chris North. *BABES-brushing+ Linking, Attributes, and Blobs Extension to Storyboard*. Tech. rep. TR-08-02. Virginia Tech, 2008.
1. **Regis Kopper**, Mara G. Silva, Ryan P. McMahan, and Doug A. Bowman. *Increasing the Precision of Distant Pointing for Large High-Resolution Displays*. Tech. rep. TR-08-17. Virginia Tech, 2008.

Patents

2. **Regis Kopper**, David Zielinski, Andrew Cutler, Nandan Lad, Patrick Codd, and Shervin Rahimpour. *Augmented Reality-Based Navigation for Use in Surgical and Non-Surgical Procedures*. U.S. Patent Application No. 16/484,444. 2020.
1. **Regis Kopper**, Derek Nankivil, and David Zielinski. *Systems and Methods for Using Sensing of Real Object Position, Trajectory, or Attitude to Enable User Interaction with a Virtual Object*. Dec. 2019.

Additional Scholarly Output

Panels:

6. Brad Waid, Jason Jerald, Scott Ledgerwood, **Regis Kopper**, Jeremy Keniski, and Joseph Van Harken. *Challenges and Opportunities of XR Applications for High-Risk Incidents*. IEEE Virtual Reality 2023, Shanghai, China. Mar. 2023.
5. Luciano de Andrade, **Regis Kopper**, Joao RN Vissoci, Wagner L Machado, and Thiago AH Rocha. *Global Health Panel*. V International Congress of the Center for Health Sciences, State University of Maringá, Brazil. Oct. 2018.
4. Alen Y Yang, **Regis Kopper**, Tim Merel, Marcy Boyle, and Greg Castle. *Virtual Reality Panel*. 6^{th} CMU Summit on US–China Innovation and Entrepereneurship. Apr. 2017.
3. **Regis Kopper**, C. Bruzelius, A. Giordano, E. Svalduz, and P. Borin. *Interactive Exploration of Cultural Heritage Sites through Immersive Virtual Reality. Digital Humanities for Cultural Heritage II* at Renaissance Society of America Annual Meeting, Boston, MA. Apr. 2016.
2. **Regis Kopper**, Marcelo Zuffo, Maurizio Forte, Fred Limp, Ryan Williams, Eleni Bozia, and Alexander Kulik. *Cyberarcheology – Issues and Opportunities with Virtual Reality for a Traditional Humanities Discipline*. IEEE Virtual Reality 2016, Greenville, NC. Mar. 2016.
1. Chris North, John M. Carroll, Kurt Luther, **Regis Kopper**, and Steve Harrison. *Future Directions for HCI Research: Next 10-20 Years? (Invited)*. CHCI 20-Year Celebrationm Virginia Tech. Oct. 2015.

Presentations and Talks:

23. *Exploring the Transformative Potential of Extended Reality in Healthcare and Public Safety.* Invited Talk at Instituto Superior Técnico (Higher Technical Institue), University of Lisbon. May 2023.
22. *Improving the User Experience in Extended Reality Interfaces through Interaction Design, Comfort and Customization.* Invited Talk at UNCG Psychology Department. Oct. 2020.
21. *Simulating Next-Generation Public Safety User Interfaces in Virtual Reality.* Presentation at the 2019 NIST PSCR Stakeholders Meeting. June 2020.
20. *Improving the User Experience in Extended Reality Interfaces through Interaction Design, Comfort and Customization.* Invited Talk at University of Californa, Merced. Mar. 2019.
19. *Improving the User Experience in Extended Reality Interfaces through Interaction Design, Comfort and Customization.* Invited Talk at University of North Carolina at Greensboro. Mar. 2019.
18. *Improving the User Experience in Extended Reality Interfaces through Interaction Design, Comfort and Customization.* Invited Talk at University of Central Florida. Feb. 2019.
17. *Improving the User Experience in Extended Reality Interfaces through Interaction Design, Comfort and Customization.* Invited Talk at University of Maryland Baltimore County. Feb. 2019.
16. *Improving the User Experience in Extended Reality Interfaces through Interaction Design, Comfort and Customization.* Invited Talk at New Jersey Institute of Technology. Feb. 2019.
15. *Requirement Analysis and Participatory Design of next Generation Public Safety User Interfaces.* Presentation at the 2019 NIST PSCR Stakeholders Meeting. July 2019.
14. *Virtual and Augmented Reality for Global Health Solutions: Fiction or Answer?* Invited Talk at the V International Congress of the Center for Health Sciences, State University of Maringá, Brazil. Oct. 2018.
13. *Measuring the Benefits of Immersive Virtual Environments.* Invited Talk at Federal University of Rio Grande do Sul. Jan. 2016.
12. *Measuring the Benefits of Immersive Virtual Environments.* Invited Talk at University of São Paulo. Dec. 2015.
11. *Measuring the Benefits of Immersive Virtual Reality.* Invited Talk at the University of California, Merced. Apr. 2015.
10. *Understanding the Benefits of Immersive Virtual Reality: From Interaction to Visualization.* Invited Talk at Colorado State University. May 2014.
9. *Understanding the Benefits of Immersive Virtual Reality: From Interaction to Visualization.* Invited Talk at Fermi National Labs. May 2014.
8. *Using Immersive Virtual Reality as a Medium for Applied Photonics.* Invited Talk at 2014 FIP Symposium, Duke University. Mar. 2014.
7. *Models and Techniques That Improve and Augment Interactive Visualization.* Invited Talk at UFRGS University, Brazil. Mar. 2013.
6. *Models and Techniques That Improve and Augment Interactive Visualization.* Visualization Friday Forum, Duke University. Jan. 2013.

5. *Distal Pointing Interaction: Models, Techniques and Application.* Invited Talk at Agilent Technologies. May 2012.
4. *Understanding and Improving Distal Pointing Interaction.* Invited Talk at Duke University. May 2012.
3. *Leveraging the Scientific Impact of Applied Research with Concepts from Basic Science.* Invited Talk at the University of Georgia. Aug. 2011.
2. *Leveraging the Scientific Impact of Applied Research with Concepts from Basic Science.* University of Florida Graduate Seminar. Sept. 2011.
1. *Increasing the Precision of Distant Pointing for Large High-Resolution Displays.* Invited Talk at PUCRS University, Brazil. June 2008.

Service

- Editorship
  - Guest Editor: Computer & Graphics Special Section on the 2022 Symposium on Virtual and Augmented Reality, 2022
  - Guest Editor: Computer & Graphics Special Section on the 2021 Symposium on Virtual and Augmented Reality, 2021
  - Editor: Frontiers in Virtual Reality, 10/2019–present
  - Associate Editor: Frontiers in Virtual Reality, 10/2019–present
  - Associate Editor: Frontiers in Robotics and AI (Section: Virtual Environments), 07/2018–10/2019
  - Review Editor: Frontiers in Virtual Environments, 2014–10/2019
- Chairing
  - Program chair: 2022 Brazilian Symposium on Virtual and Augmented Reality (SVR)
  - Program chair: 2021 IEEE Virtual Reality Conference, Conference Paper Track
  - Program chair: 2020 IEEE Virtual Reality Conference, Conference Paper Track
  - Videos chair: 2018 IEEE Virtual Reality Conference
  - Publicity chair: 2017 IEEE Virtual Reality Conference
  - Program chair: 2016 Brazilian Symposium on Virtual and Augmented Reality (SVR)
  - Posters chair: 2016 ICAT-EGVE Conference
  - Workshops chair: 2014–2016 IEEE Virtual Reality Conference
  - Awards chair: 2015 ICAT-EGVE Conference
  - Posters chair: 2013 IEEE Virtual Reality Conference
  - Student Volunteers chair: 2012 IEEE Virtual Reality Conference
  - Local Arrangements chair for the IEEE Virtual Reality 2007 Conference
- Program Committees

  - International program committee: IEEE Conference on Virtual Reality and 3D User Interface, 2024
  - International program committee: IEEE VR Workshop on Locomotion and Wayfinding in XR, 2024
  - International program committee: IEEE International Symposium on Mixed and Augmented Reality, Journal Papers Track, 2023
  - International program committee: 19th EuroVR International Conference, EuroVR 2022
  - International program committee: IEEE Conference on Virtual Reality and 3D User Interface, Conference Papers Track, 2019
  - International program committee: IEEE Conference on Virtual Reality and 3D User Interfaces, Journal Papers Track, 2018
  - International program committee: IEEE Virtual Reality Conference, 2017
  - International program committee: IEEE Symposium on 3D User Interfaces, 2013–2017
  - International program committee: ICAT-EGVE conference, 2016
  - International program committee: IEEE Virtual Reality Conference, 2013–2015
  - International program committee: International Symposium on Visual Computing, 2014

- Award Committees
  - Member, IEEE VGTC Virtual Reality Service Award Committee, 2023.
  - Member, IEEE VGTC Virtual Reality Best Dissertation Award Committee, 2023.
  - Member, IEEE VGTC Virtual Reality Service Award Committee, 2022 (first time award was given).

- Member of Scientific Panels for Grant Applications:
  - NIH (2017, 2018)
  - NSF (2017, 2019, 2020, 2021)

- Reviewer for Journals:
  - Scientific Reports
  - Frontiers in Virtual Reality
  - Frontiers in Virtual Environmnents
  - IEEE Computer Graphics & Applications
  - International Journal of Human-Computer Studies
  - IEEE Transactions on Visualization and Computer Graphics
  - Computer & Graphics
  - Presence Teleoperators and Virtual Environments

- Reviewer for Conferences:
  - ACM SIGCHI Conference on Human Factors in Computer Systems (CHI)

  - IEEE Virtual Reality (VR)
  - IEEE Symposium on 3D User Interfaces (3DUI)
  - ACM International Conference on Intelligent User Interfaces (IUI)
  - ACM Spatial User Interfaces (SUI)
  - Brazilian Symposium on Virtual and Augmented Reality (SVR)
  - ICAT-EGVE

Teaching

- **Principles of Database Systems**
  University of North Carolina at Greensboro
  - 2023: Fall
  - 2022: Fall, Spring
  - 2021: Fall, Spring
  - 2020: Fall, Spring
- **Principles of Virtual Reality Design and Development**
  University of North Carolina at Greensboro
  - 2023: Fall
  - 2022: Fall
- **Principles of Operating Systems**
  University of North Carolina at Greensboro
  - 2022: Spring
- **Virtual Reality Systems Research and Design**
  University of North Carolina at Greensboro
  - 2021: Spring
  - 2020: Spring
- **Human-Computer Interface Development**
  University of North Carolina at Greensboro
  - 2021: Fall
  - 2020: Fall
- **Preparing Data for Analytics**
  University of North Carolina at Greensboro
  - 2019: Fall
- **Human-Computer Interaction**
  Duke University

  - 2018: Fall

- **Virtual Reality Systems Research and Design**
  Duke University

  - 2019: Spring
  - 2018: Spring
  - 2017: Spring

- **Introduction to Programming and User Interface Design in Unity 3D**
  Duke University

  - 2016: Fall

- **Introduction to Interaction Design and Virtual Environments**
  Duke University

  - 2014: Spring

Student Advising

Current Ph.D. students:

1. Etibar Aliyev, Ph.D. expected 2027.

Current M.S. students:

1. Jerry Terrell, M.S. expected 2024.

Completed Ph.D. students:

1. Zekun Cao, Ph.D. Dissertation Title. Thesis Title: The Role of Granulated Rest Frames on Mitigating Visually-Induced Motion Sickness and Its Application.

Completed M.S. students:

1. Yunhan Yang, M.S. 2018. Thesis Title: Evaluation of an Eye Tracking Selection Technique with Progressive Refinement.
2. Zekun Cao, M.S. 2017. Thesis Title: The effects of rest frames in simulator sickness reduction.

Undergraduate Student Advising:

1. Gabriel Costa de Oliveria, Capstone Project. 2020. Thesis Title: Evaluation of an Eye Tracking Selection Technique with Progressive Refinement.

Thesis Committees

Member of Doctoral Theses Committees:

1. Bruna Fernandes Da Rocha. Mindfulness, technology and labor health: effects of different intervention formats with health professionals (in Portuguese). Doctoral Proposal Defense. Pontifical Catholic University of Rio Grande to Sul (PUCRS), Brazil, 2021.
2. Andre Montes Rodrigues. Interactive visual analysis of hermetic and dense virtual models: the case of grain structures. Final defense. University of Sao Paulo, Brazil, 2021.
3. Zekun Cao. Preliminary Examination. The role of granulated rest frames on mitigating visually-induced motion sickness and its application. Duke University, 2020.
4. Yujiro Okuya. CAD Data Modification Techniques for Design Reviews with Heterogeneous Interactive Systems. Final defense. University Paris-Sud, 2019.
5. Zekun Cao. Qualifying Exam. Duke University, 2018.
6. Jillian Clements. Evaluating Human Performance in Virtual Reality Based on Physiological Signal Analysis. Final defense. Duke University, 2018.
7. Brian Lee. Qualifying Exam. Duke University, 2018.
8. Jillian Clements. Synchronizing Electroencephalography and Kinematic Behavior in Immersive Virtual Reality. Preliminary exam. Duke University, 2017.
9. Asma Naz. Interactive Living Space for Neo-Nomads: An Anticipatory Approach. Final defense. University of Texas, Dallas, 2017.
10. Olavo da Rosa Belloc. A Scalable Communications Architecture for Immersive Visualization Systems (*original in Portuguese – Uma Arquitetura de Comunicação Escalável para Sistemas de Visualização Imersivos*). Final defense. University of São Paulo, Brazil, 2016.

Member of Master's Theses Committees:

1. Renan Luigi Martins Guarese. Augmenting analytics: use case studies of Situated Data Visualization towards decision-making, Master thesis, Federal University of Rio Grande do Sul, Brazil, 2019.
2. Chang Liu. The Alife Bestiary: An AR Object Recognition Project on the Archivolt of Alife, Master thesis, Duke University, 2019.
3. Yuchen Zhao. VR Touch Museum. Master thesis, Duke University, 2018.
4. Daniel Furnas. The Effect Of Computerised Verb Network Strengthening Treatment On Lexical Retrieval In Aphasia. Master thesis, University of Florida, 2012.

External Examiner for Master's Theses:

1. Tanaka Alois Chiromo. Efficient rendering of real-world environments in a virtual reality application, using segmented multi-resolution meshes. Master thesis, University of Pretoria, 2020.

Member of Master's Project Defense Committees:

1. Tingyu Shi. Multiple Sclerosis Lesion Extraction Using 3D U-Net. University of North Carolina at Greensboro, 2021.
2. Xinrui Zhang. 3D Image Registration of Functional MRI Using Image and Spatial Transformer Network. University of North Carolina at Greensboro, 2021.
3. Pavan Koda. Fake News Detection in Social Media using Machine Learning. University of North Carolina at Greensboro, 2021.
4. Rohith Rangineni. Predicting the Online Chat Abuse and Comparison with Neural Networks. University of North Carolina at Greensboro, 2021.

Academic Experience

University of North Carolina at Greensboro—Greensboro, NC
Assistant Professor of Computer Science, Duke University:August 2019–present

Duke University—Durham, NC
Adjunct Assistant Professor of Mechanical Engineering and Materials Science, Duke University:
August 2019–present

Duke University—Durham, NC
Assistant Research Professor of Computer Science: July 2016–July 2019

- Secondary Appointment

Duke University—Durham, NC
Assistant Research Professor of Mechanical Engineering and Materials Science: October 2015–July 2019

- Serving as Director of the Duke immersive Virtual Environment (DiVE) lab

Duke University—Durham, NC
Research Scientist: January 2014–October 2015

- Serving as Director of the Duke immersive Virtual Environment (DiVE) lab

Duke University—Durham, NC
Visiting Research Scholar: December 2012–December 2013

- Serving as Director of the Duke immersive Virtual Environment (DiVE) lab

University of Florida—Gainesville, Fl
Postdoctoral Associate: August 2011–December 2012

- Research the use of virtual humans as conversational agents in interpersonal skills training

- Design and development of educational systems for the training of assessment and diagnosis of medical conditions
- Research advisor: Dr. Benjamin Lok

Virginia Tech—Blacksburg, Va
Graduate Research Assistant: August 2009–June 2011

- Benefits of immersion for military training
- Design and development of immersive systems to evaluate the effectiveness of different display characteristics on training tasks
- Research advisor: Dr. Doug A. Bowman

Virginia Tech—Blacksburg, Va
Graduate Teaching Assistant: August 2006–Summer 2009

- Grading programs, exams and papers
- Assisting professor during in-class activities
- Assisting students with questions
- Teaching assistant for
  - Data Structures (Fall 2006)
  - Human Computer Interaction (Spring 2007 through Fall 2008)
  - Introduction to Programming in Java (Spring 2009)
  - Introduction to Programming in C (Summer 2009)

Virginia Tech—Blacksburg, Va
Graduate Research Assistant: May–August 2008

- Development of notecards system for the iPhone
- Research advisor: Dr. Francis Quek

Related Work Experience

Envirolink, Inc—Raleigh, NC
Scientific Consultant: September 2017–December 2018

- Oversight of development of a Virtual Reality experience for waste water treatment plant
- Ensuring that best design practices are being engaged by external software development contractor
- Bridging the gap between the user and the technical software development team

Bosch Research and Technology Center—Palo Alto, CA
Intern: May–August 2007

- Human-Computer Interaction Intern
- Developed floor plan extraction tool for laser range finder
- Research advisor: Dr. David Krum

Hewlett Packard—Porto Alegre, RS, Brazil
Software Engineer: March 2006–August 2006

- Development of administration software for middle and high end LaserJet printers
- Only member of project team in Brazil
- Self management of responsibilities
- Worked closely to coworkers in the HP Headquarters in Boise, ID
- Left HP to pursue graduate study in the USA

Partner Informatica—Porto Alegre, RS, Brazil
Program Manager: May 2003–February 2004

- Outsourced from Webstuff (working on site) for the development of a web-based finance system
- Managed a team of 4 developers

Webstuff Informatica—Porto Alegre, RS, Brazil
Co-owner: March 2001–March 2004

- Managed an office with six workers
- Development of web-based systems
- Worked closely with clients
- Acquired good communication skills

Skills

Research:

- Experienced with research since 2003.
- Experience with interdisciplinary research with collaborators in engineering, medicine and the humanities.
- 3D Interaction research experience, with publication of papers in international journals and conferences.
- Experienced with theoretical models of Human-Computer Interaction.

Languages:

- **English**: fluent in reading, speaking and writing
- **Portuguese**: fluent in reading, speaking and writing
- **Spanish**: fluent in reading and speaking; intermediate in writing

Early Achievements

- Taught the course entitled "Development of Virtual Reality Applications" during the Brazilian Symposium on Virtual Reality (2003-2004)
- Lived in Sydney, Australia as an exchange student (1995–1996)