# EELKE FOLMER - CV

University of Nevada Computer Science me@eelke.com

## EDUCATION

- 2005 **PhD, Computer Science**, University of Groningen, The Netherlands. Area: Software Engineering/Human Computer Interaction; Advisor: Jan Bosch. Thesis: Software Architecture Analysis of Usability.
- 2001 **MS, Technical Computer Science**, University of Groningen, The Netherlands. Area: Software Engineering, Databases; Advisor: Ben Spaanenburg and Frits Greuter Thesis: Distributed Database Performance for the Tetranode System.

## **RESEARCH INTERESTS**

I am interested in human-computer interaction specifically focusing on immersive 3D environments. I have worked on the virtual locomotion problem: how to navigate large VR environments efficiently without getting VR sick. I have extensive experience with navigation, i.e., indoor navigation and virtual navigation. Ran dozens of user studies and published papers at top tier venues in HCI/VR. Taught 3D/VR related courses. Experience with Unity/C++/Objective-C. Managed reasonable sized research teams. Expert in areas like Software Engineering/Accessibility and proficient in Neuroscience

#### **EMPLOYMENT**

- 2018-today Professor and Chair, Department of Computer Science and Engineering, University of Nevada. I helped increased the departments annual average research awards from \$2.5M to \$5M (FY19-23). By encouraging high quality research, my faculty received four NSF CAREER awards. Secured space in the new Pennington Engineering building and doubled our department's research space. Acquired top 30 rankings in robotics and HPC on csrankings.org. Managed up to 27 faculty and three admin staff. Acquired five new faculty lines and hired eight new faculty (including three women). Increased salaries and arranged retention packages. Oversaw ten tenure and/or promotion applications (six succeeded and four pending). Launched an online MS in Cybersecurity ( $\sim$ 34 students since 2021) and Computational Linguistics BS (1 student since 2022). Increased undergraduate CSE students from 742 to 965 and graduate students from 111 to 152 (69 PhDs). Increased summer course offerings and TA support for labs and reduced 4-year graduation rate with 5% while also better retaining underrepresented students. Increased women CSE students from 14 to 22%, Hispanic students from 13 to 17% and Black students from 3 to 7%. Acquired a \$600k gift to start a Robotics Center and to develop a Robotics MS (to be launched in Spring 2023). Raised funds from industry to support various endeavours. Maintained ABET accreditation and successfully performed an external review of our graduate programs.
- 2016-2018 Associate Professor and Graduate Director (2016-2018), Department of Computer Science and Engineering, University of Nevada. Increased number and quality of applying graduate students. Acquired four diversity fellowships from the graduate school. Wrote graduate handbook. Reduced MS credits for courses only MS to make it more attractive for industry students. Increased graduate students from 85 to 111.
- 2016-2018 **CEO**, VRmersive Sold ~1,000 copies of a walking-in-place plugin for Unity.
- 2014 Visiting Scientist, Google Research, Mountain View. Worked on Project Tango & Cardboard.
- 2006-2012 Assistant Professor, Department of Computer Science and Engineering, University of Nevada.
- 2005-2006 **Postdoctoral Fellow**, Department of Computer Science, University of Alberta, Edmonton.
- 2001-2005 Graduate Research Assistant, Department of CS, University of Groningen.
- 2000-2001 Research Internship, Research on real time databases. Rohill Technologies, Hoogeveen.
- 1998-2000 Part-time Software Engineer, Notenbomer Internet Center, Groningen.

# **RESEARCH METRICS**

Total publications: 72	Funding	Students graduated	Courses taught	
Total citations: 4,412	PI/PD: \$3,075k	PhD:7	Graduate:4	
h-index: 33*	CO-PI: \$655k	MS: 18	Undergrad:37	
i10-index: 59	Total # grants: 21	Women:5	New courses :6	
Cites per paper: 61	Avg award: \$144k	Disabled:1	Avg Eval: 3.2/4	
*Retrieved with Google Scholar on February 11, 2023.				

# FUNDING

2022-2027	National Institutes of Health, COBRE: Center for Integrative Neuroscience: Virtual Reality and
	Augmented Reality Core, Phase III, award #5P20GM103650 to <b>Eelke Folmer</b> (PD) \$491,486
2019-2023	National Science Foundation, CHS: Small: Towards Accommodating Sex Differences in VR Sickness,
	award # to <b>Eelke Folmer</b> (PI) and Paul MacNeilage (Co-PI) \$499,785
2019-2022	National Science Foundation, IGE: Enhancing Diversity by Changing Institutional Culture and
	Scaffolding Student Success, award to David Zeh (PI) and Karla Wagner, Bridget Walsh, Matthew
	Forister and <b>Eelke Folmer</b> (Co-PI) \$499,926
2018-2019	Google Research Award, Understanding Gender Differences in Visual/Vestibular Conflict during
	Virtual Locomotion, award to <b>Eelke Folmer</b> (PI) and Paul MacNeilage (Co-PI) \$44,044
2017-2022	National Institute of Health, COBRE: Center for Integrative Neuroscience: Virtual Reality and
	Augmented Reality Core, award #5P20GM103650 to <b>Eelke Folmer</b> (PD) \$655,380
2017-2018	NASA EPSCOR, Underwater Virtual Reality for Zero-G Training,
	Award to Paul MacNeilage (PI) and <b>Eelke Folmer</b> (Co-PI) \$30,000
2017-2018	UNR VPRI Scholarly Endeavors Grant, Impacts of Exergaming on Children's Motivation and
	Physical Activity,Award to You Fu (PI) and <b>Eelke Folmer</b> (CO-PI) \$2,500
2017-2018	Mozilla Foundation, Understanding Gender Differences in VR sickness,
	Award to <b>Eelke Folmer</b> (PI) and Paul MacNeilage (Co-PI) \$34,156
2016-2017	InfoSys Foundation, SimViz: a visual impairment simulation tool for iOS,
	Award to Eelke Folmer (PI) \$10,000
2016-2017	Nevada Advanced Autonomous Systems Innovation Center, Sensing Environmental Change in
	Freshwater Ecosystems via the Development of Autonomous Water Vehicles, Award to Sudeep
2015 2017	Chandra (PI), Kostas Alexis (Co-PI), <b>Eelke Folmer</b> (Co-PI) \$10,000
2015-2016	National Science Foundation, WORKSHOP: Doctoral Consortium at ASSETS 2015,
2014 2015	Award to <b>Eelke Folmer</b> (PI) \$22,854
2014-2015	Award to Folke Folmer (DI) #150,000
2014 2015	Award to Eelke Fourner (PI) \$150,000 National Science Equipation EACEP: Cuide Drones for Plind Athlates, CHS Award #1445290 to
2014-2015	Folko Folmor (DI) \$72.080
2014-2015	Nevada Advanced Autonomous Systems Innovation Center, Navatar-App: Ubiquitous Indoor
2014-2015	Navigation for Users who are Blind, Award to <b>Felke Folmer</b> (PI) \$15,000
2013-2014	Google Research An Indoor Navigation System for Blind Users using Google Glass Google
2013 2014	Research Award to Felke Folmer (PI) \$40,208
2013-2014	Microsoft Research ASK' An Assistive Spatial Knowledge Navigator for Users who are Blind
	Software Engineering Innovation Foundation Award to <b>Eelke Folmer</b> (PI) \$25,000
2012-2015	<b>National Science Foundation</b> . Proprioceptive Displays to Engage Blind Users into Healthy Whole
	Body Interaction. HCC Award #1118074 to <b>Eelke Folmer</b> (PI) \$410,220
2011-2014	National Science Foundation, TextSL: A Virtual World Interface for Visually Impaired, HCC Award
	#0917362 to <b>Eelke Folmer</b> (PI) and George Bebis (Co-PI) \$499,332
2007-2009	National Science Foundation, SGER: Developing an Accessible Client for Second Life, HCC Award
	#0738921 to <b>Eelke Folmer</b> (PI) \$90,488.
2007-2008	Bally Technologies, Exploration of research Directions to Provide Solutions for Improving Quality
	Assurance at Bally Technologies, Award to Sergiu Dascalu (PI), <b>Eelke Folmer</b> (CO-PI), Bobby Bryant
	and Murat Yuksel \$112,972

2007 University of Nevada, Improving the Accessibility of Video Games, Junior Faculty Research Grant to Eelke Folmer (PI), \$15,000

#### **CONFERENCE PAPERS**

- [c52] Aniruddha Prithul, Jiwan Bhandari, Walker Spurgeon, and **Eelke Folmer** Evaluation of Hands-free Teleportation in VR. In Proceedings of ACM Symposium on Spatial User Interaction (SUI'22), Article:5, Pages 1–6, 2022.
- [c51] Aniruddha Prithul, Isayas Berhe Adhanom, and **Eelke Folmer** Embodied third-person virtual locomotion using a single depth camera. In Proceedings of Graphics Interface (GI'22), 2021.
- [c50] Aniruddha Prithul and Eelke Folmer. Analysis of positional tracking space usage when using teleportation. In 2021 IEEE Conference on Virtual Reality and 3D User Interfaces Abstracts and Workshops (VRW), pages 480–481, 2021.
- [c49] Isayas Berhe Adhanom, Nathan Navarro Griffin, Paul MacNeilage, and **Eelke Folmer**. The effect of a foveated field-of-view restrictor on VR sickness. In 2020 IEEE Conference on Virtual Reality and 3D User Interfaces (VR), pages 645–652, 2020.
- [c48] Isayas B. Adhanom, Samantha C Lee, **Eelke Folmer**, and Paul MacNeilage. Gazemetrics: An open-source tool for measuring the data quality of HMD-based eye trackers. In ACM Symposium on Eye Tracking Research and Applications, pages 1–5, 2020.
- [c47] Majed Al Zayer, Isayas B Adhanom, Paul MacNeilage, and **Eelke Folmer**. The effect of field-of-view restriction on sex bias in VR sickness and spatial navigation performance. In Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems, pages 1–12, 2019.
- [c46] Christian Sinnott, James Liu, Courtney Matera, Savannah Halow, Ann Jones, Matthew Moroz, Jeffrey Mulligan, Michael Crognale, **Eelke Folmer**, and Paul MacNeilage. Underwater virtual reality system for neutral buoyancy training: Development and evaluation. In 25th ACM Symposium on Virtual Reality Software and Technology (VRST '19), 2019.
- [c45] Nathan Navarro Griffin and Eelke Folmer. Out-of-body locomotion: Vectionless navigation with a continuous avatar representation. In 25th ACM Symposium on Virtual Reality Software and Technology (VRST'19), pages 1–8, 2019.
- [c44] Nathan Navarro Griffin, James Liu, and **Eelke Folmer**. Evaluation of handsbusy vs handsfree virtual locomotion. In Proceedings of the 2018 Annual Symposium on Computer-Human Interaction in Play (CHI PLAY'18), pages 211–219, 2018.
- [c43] Jiwan Bhandari, Paul MacNeilage, and **Eelke Folmer**. Teleportation without spatial disorientation using optical flow cues. In Proceedings of Graphics Interface 2018 (GI'18), pages 162 167, 2018.
- [c42] Majed Al Zayer and **Eelke Folmer**. Stereotrack: 180-degree low-cost acoustic positional tracking for mobile vr platforms. In Proceedings of the 2018 Annual Symposium on Computer-Human Interaction in Play Companion Extended Abstracts, pages 143–154, 2018.
- [c41] James Liu, Hirav Parekh, Majed Al-Zayer, and **Eelke Folmer**. Increasing walking in VR using redirected teleportation. In Proceedings of the 31st Annual ACM Symposium on User Interface Software and Technology, UIST '18, pages 521–529, 2018.
- [c40] Jiwan Bhandari, Sam Tregillus, and **Eelke Folmer**. Legomotion: Scalable walking-based virtual locomotion. In Proceedings of the 23rd ACM Symposium on Virtual Reality Software and Technology, VRST '17, pages 18:1–18:8, 2017.
- [c39] Sam Tregillus, Majed Al Zayer, and **Eelke Folmer**. Handsfree omnidirectional VR navigation using head tilt. In Proceedings of the 2017 CHI Conference on Human Factors in Computing Systems, pages 4063–4068, 2017. ACM.
- [c38] Majed Al Zayer, Sam Tregillus, and Eelke Folmer. Pawdio: Hand input for mobile VR using acoustic sensing. In Proceedings of the 2016 Annual Symposium on Computer-Human Interaction in Play, CHI PLAY '16, pages 154–158, 2016.
- [c37] William Grussenmeyer and **Eelke Folmer**. Audiodraw: User preferences in non-visual diagram drawing for touchscreens. In Proceedings of the 13th Web for All Conference, W4A '16, pages 22:1–22:8, 2016.

- [c36] Sam Tregillus and **Eelke Folmer**. VR-STEP: Walking-in-place using inertial sensing for hands free navigation in mobile VR environments. In Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems, pages 1250–1255, 2016. ACM.
- [c35] Ilias Apostolopoulos, Daniel S. Coming, and **Eelke Folmer**. Accuracy of pedometry on a head-mounted display. In Proceedings of the 33rd Annual ACM Conference on Human Factors in Computing Systems, CHI '15, pages 2153–2156, 2015.
- [c34] Halim Cagri Ates, Alexander Fiannaca, and **Eelke Folmer**. Immersive simulation of visual impairments using a wearable see-through display. In Proceedings of the Ninth International Conference on Tangible, Embedded, and Embodied Interaction, TEI '15, pages 225–228, 2015.
- [c33] Alexander Fiannaca, Ilias Apostolopoulous, and **Eelke Folmer**. Headlock: A wearable navigation aid that helps blind cane users traverse large open spaces. In Proceedings of the 16th International ACM SIGACCESS Conference on Computers & Accessibility (ASSETS), pages 19–26, 2014.
- [c32] Burkay Sucu and **Eelke Folmer**. The blind driver challenge: Steering using haptic cues. In Proceedings of the 16th International ACM SIGACCESS Conference on Computers & Accessibility (ASSETS), pages 3–10, 2014.
- [c31] Vinitha Khambadkar and **Eelke Folmer**. A tactile-proprioceptive communication aid for users who are deafblind. In Proceedings of Haptics Symposium (HAPTICS), pages 239–245, 2014.
- [c30] Tony Morelli, Lauren Lieberman, John Foley, and **Eelke Folmer**. An exergame to improve balance in children who are blind. In Proceedings of Foundations of Digital Interactive Games (FDG), 2014.
- [c29] Ilias Apostolopoulos, Navid Fallah, **Eelke Folmer**, and Kostas Bekris. Integrated online localization and navigation for people with visual impairments using smart phones. ACM Transactions on Interactive Intelligent Systems, 3(4):1–25, 2014.
- [c28] Tony Morelli and **Eelke Folmer**. Real-time sensory substitution to enable players who are blind to play video games using whole body gestures. Entertainment Computing, 5(1):83 90, 2014.
- [c27] Miran Kim, Jeff Angermann, George Bebis, and **Eelke Folmer**. Vizical: accurate energy expenditure prediction for playing exergames. In Proceedings of the 26th annual ACM symposium on User interface software and technology, UIST '13, pages 397–404, 2013.
- [c26] Vinitha Khambadkar and **Eelke Folmer**. GIST: a gestural interface for remote nonvisual spatial perception. In Proceedings of the 26th annual ACM symposium on User interface software and technology (UIST), pages 301–310, 2013.
- [c25] Alexander Fiannaca, Tony Morelli, and **Eelke Folmer**. Haptic target acquisition to enable spatial gestures in nonvisual displays. In Proceedings of the 2013 Graphics Interface Conference (GI), pages 213–219, 2013.
- [c24] Ilias Apostolopoulos, Eelke Folmer, and George Bebis. Improving accessibility of virtual worlds by automatic object labeling. In Proceedings of International Symposium on Visual Computing (ISVC), volume of Lecture Notes in Computer Science, pages 254–265, 2013.
- [c23] Burkay Sucu and **Eelke Folmer**. Haptic interface for non-visual steering. In Proceedings of the international conference on Intelligent user interfaces (IUI), IUI '13, pages 427–434, 2013.
- [c22] Ilias Apostolopoulos, Navid Fallah, **Eelke Folmer**, and Kostas Bekris. Integrated online localization and navigation for people with visual impairments using smart phones. In Proceedings of IEEE International Conference on Robotics and Automation (ICRA), pages 1322 –1329, may 2012.
- [c21] Navid Fallah, Ilias Apostolopoulos, Kostas Bekris, and **Eelke Folmer**. The user as a sensor: navigating users with visual impairments in indoor spaces using tactile landmarks. In Proceedings of the ACM annual conference on Human Factors in Computing Systems (CHI), pages 425–432, 2012.
- [c20] Tony Morelli and **Eelke Folmer**. Twuist: A discrete tactile-proprioceptive display for eye and ear free output on mobile devices. In Proceedings of Haptics Symposium 2012 (HAPTICS'12), pages 443–450, 2012.
- [c19] **Eelke Folmer** and Tony Morelli. Spatial gestures using a tactile-proprioceptive display. In Proceedings of the Sixth International Conference on Tangible, Embedded and Embodied Interaction (TEI), pages 139–142, 2012.
- [c18] Daniel Ramos and **Eelke Folmer**. Supplemental sonification of a bingo game. In Proceedings of Foundations of Digital Interactive Games (FDG'11), pages 168–173, 2011.

- [c17] **Eelke Folmer**, Fangzhou Liu, and Barrie Ellis. Navigating a 3D avatar using a single switch. In Proceedings of Foundations of Digital Interactive Games (FDG'11), pages 154–160, 2011.
- [c16] Tony Morelli and **Eelke Folmer**. Real-time sensory substitution to enable players who are blind to play gesture based videogames. In Proceedings of Foundations of Digital Interactive Games (FDG'11), pages 147–153, 2011.
- [c15] Bugra Oktay and **Eelke Folmer**. Syntherella: a feedback synthesizer for efficient exploration of virtual worlds using a screen reader. In Proceedings of Graphics Interface 2011 (GI'11), pages 65–70, 2011.
- [c14] Ilias Apostolopoulos, Navid Fallah, **Eelke Folmer**, and Kostas Bekris. Feasibility of interactive localization and navigation of people with visual impairments. In Proceedings of the 11th IEEE Intelligent Autonomous Systems (IAS), pages 22–32, August 2010.
- [c13] Tony Morelli, John Foley, Lauren Lieberman, and **Eelke Folmer**. Pet-n-punch: upper body tactile/audio exergame to engage children with visual impairments into physical activity. In Proceedings of Graphics Interface 2011 (GI'11), pages 223–230, 2011.
- [c12] Tony Morelli, John Foley, and **Eelke Folmer**. VI-Bowling: a tactile spatial exergame for individuals with visual impairments. In Proceedings of the 12th international ACM SIGACCESS conference on Computers and accessibility (ASSETS'10), pages 179–186, 2010.
- [c11] Bugra Oktay and **Eelke Folmer**. Synthesizing meaningful feedback for exploring virtual worlds using a screen reader. In Proceedings of the 28th of the international conference extended abstracts on Human factors in computing systems (CHI'10), pages 4165–4170, 2010.
- [c10] Bei Yuan, Manjari Sapre, and **Eelke Folmer**. Seek-n-tag: a game for labeling and classifying virtual world objects. In Proceedings of Graphics Interface 2010 (GI'10), pages 201–208, 2010.
- [c9] Tony Morelli, John Foley, Luis Columna, Lauren Lieberman, and **Eelke Folmer**. VI-Tennis: a vibrotactile/audio exergame for players who are visually impaired. In Proceedings of the Fifth International Conference on the Foundations of Digital Games, FDG '10, pages 147–154, 2010.
- [c8] **Eelke Folmer**, Bei Yuan, Dave Carr, and Manjari Sapre. Textsl: a command-based virtual world interface for the visually impaired. In Proceedings of the 11th international ACM SIGACCESS conference on Computers and accessibility (ASSETS'09), pages 59–66, 2009.
- [c7] **Eelke Folmer**. Usability patterns in games. In Proceedings the International Academic Conference on the Future of Game Design and Technology (Futureplay'06), 2006.
- [c6] Bei Yuan and **Eelke Folmer**. Blind hero: enabling guitar hero for the visually impaired. In Proceedings of the 10th international ACM SIGACCESS conference on Computers and accessibility (ASSETS'08), pages 169–176, 2008.
- [c5] Eelke Folmer. Component based game development a solution to escalating costs and expanding deadlines? In Proceedings of 10th International ACM SIGSOFT Symposium on Component-Based Software Engineering (CBSE'07), pages 66–73, 2007.
- [c4] Eelke Folmer and Jan Bosch. Cost effective development of usable systems: Gaps between hci and software architecture design. In Proceedings of the 14th International Conference on Information Systems Development: Methods and Tools, Theory and Practice (ISD'05), pages 337–349, 2006.
- [c3] Eelke Folmer and Jan Bosch. Case studies on analyzing software architectures for usability. In Proceedings of 31st EUROMICRO Conference on Software Engineering and Advanced Applications (SEAA'05), pages 206 – 213, 2005.
- [c2] **Eelke Folmer**, Jilles van Gurp, and Jan Bosch. Software architecture analysis of usability. In Proceedings of the 9th IFIP International Conference on Engineering for Human Computer Interaction (EHCI'04), pages 111–112, 2004.
- [c1] **Eelke Folmer** and Jan Bosch. Usability patterns in software architecture. In Proceedings of the 10th International Conference on Human-Computer Interaction (HCII'03), pages 93–97, 2003.

#### JOURNAL PAPERS

- [j18] Isayas Berhe Adhanom, Paul MacNeilage. and **Eelke Folmer**, Eye-tracking in Virtual Reality: a Broad Review of Applications and Challenges Frontiers in Virtual Reality, Volume:3, 2022.
- [j17] Isayas Berhe Adhanom, Savannah Halow, **Eelke Folmer**, and Paul MacNeilage. VR Sickness Adaptation

With Ramped Optic Flow Transfers From Abstract To Realistic Environments. Frontiers in Virtual Reality, Volume:3, 2022.

- [j16] Isayas Berhe Adhanom, Savannah Halow, **Eelke Folmer**, and Paul MacNeilage. VR Sickness Adaptation With Ramped Optic Flow Transfers From Abstract To Realistic Environments. Frontiers in Virtual Reality, Volume:3, 2022.
- [j15] Aniruddha; Prithul, Isayas Berhe Adhanom, and **Eelke Folmer**. Teleportation in virtual reality; a mini-review. Frontiers in Virtual Reality, Volume:2, 2021.
- [j14] Isayas Berhe Adhanom, Majed Al-Zayer, Paul Macneilage, and **Eelke Folmer**. Field-of-view restriction to reduce vr sickness does not impede spatial learning in women. ACM Transactions on Applied Perception (TAP), 18(2):1–17, 2021.
- [j13] Majed Al Zayer, Paul MacNeilage, and **Eelke Folmer**. Virtual locomotion: A survey. IEEE Transactions on Visualization and Computer Graphics, 26(6):2315–2334, June 2020.
- [j12] Matthew Moroz, Isabelle Garzorz, **Eelke Folmer**, and Paul MacNeilage. Sensitivity to visual speed modulation in head-mounted displays depends on fixation. Displays, 58:12–19, 2019.
- [j11] William Grussenmeyer and **Eelke Folmer**. Accessible touchscreen technology for people with visual impairments: a survey. ACM Transactions on Accessible Computing (TACCESS), 9(2):1–31, 2017.
- [j10] Tony Morelli and **Eelke Folmer**. Real-time sensory substitution to enable players who are blind to play video games using whole body gestures. Entertainment Computing, 5(1):83 90, 2014.
- [j9] Ilias Apostolopoulos, Navid Fallah, **Eelke Folmer**, and Kostas Bekris. Integrated online localization and navigation for people with visual impairments using smart phones. ACM Transactions on Interactive Intelligent Systems, 3(4):1–25, 2014.
- [j8] Navid Fallah, Ilias Apostolopoulos, Kostas Bekris, and **Eelke Folmer**. Indoor human navigation systems: a survey. Interacting with Computers, 25(1):21–33, 2013.
- [j7] Tony Morelli, John Foley, Lauren Lieberman, and **Eelke Folmer**. Improving the lives of youth with vi through exergames. INSIGHT: Research and Practice in Visual Impairment and Blindness, 4(4):160–170, 2011.
- [j6] Bei Yuan, **Eelke Folmer**, and Frederick C. Harris, Jr. Game accessibility: a survey. Universal Access in the Information Society, 10:81–100, 2011.
- [j5] **Eelke Folmer** and Jan Bosch. Experiences with software architecture analysis of usability. International Journal of Information Technology and Web Engineering, 3(4):1–29, 2008.
- [j4] **Eelke Folmer** and Jan Bosch. A pattern framework for software quality assessment and tradeoff analysis tradeoffs. International Journal of Software Engineering and Knowledge Engineering, 17(4):515–538, 2007.
- [j3] **Eelke Folmer**, Martijn van Welie, and Jan Bosch. Bridging patterns an approach to bridge gaps between SE and HCI. Journal of Information and Software Technology, 48:69–89, 2006.
- [j2] **Eelke Folmer** and Jan Bosch. Architecting for usability; a survey. Journal of Systems and Software, 70(1), 2004.
- [j1] **Eelke Folmer**, Jilles van Gurp, and Jan Bosch. A framework for capturing the relationship between usability and software architecture. Software Process: Improvement and Practice, 8(2):67–87, 2003.

#### **BOOK CHAPTERS**

- [b2] **Eelke Folmer**. Game Accessibility. Encyclopedia of Video Games: The Culture, Technology, and Art of Gaming, Pages 3-5, Editor Mark Wolf, ISBN-10: 031337936X, 2012
- [b1] **Eelke Folmer**. Video Games for Users with Visual Impairments In Assistive Technology for Blindness and Low Vision. Editors: Sri Kurniawan and Roberto Manduchi, Taylor and Francis, ISBN 9781138073135, 2013

#### AWARDS

- 2018 Google Faculty Research Award.
- 2016 Infosys InfoMaker Award.
- 2016 Best Note at CHI-Play 2016
- 2016 Drones for Good Award (finalist).
- 2015 Nevada Rising Research Award (Nevada Board of Regents).
- 2013 Faculty Excellence Award (UNR College of Engineering).

- 2013 Google Faculty Research Award.
- 2013 Microsoft Software Engineering Innovation Award.
- 2012 Nevada Federation of the Blind: Friend of the Blind Award.
- 2012 People for the Ethical Treatment of Animals (PETA) Proggy Award.
- 2010 DaVinci Award (Finalist).

2007 Junior Faculty Research Award (University of Nevada).

#### MEDIA COVERAGE

- May. 2021 Fitness drones are coming, if inventors can get all the kinks out of them, Washington Post.
- Aug. 2018 Virtual Reality will soon be able to go underwater, UNR News.
- Aug. 2018 Leveling the Playing Field: Women in Virtual Reality, Women in Technology International.
- Feb. 2016 How Technology Is Helping the Blind Navigate the Physical World, Slate Magazine.
- Oct. 2015 The Brave New World of Generation Open, BBC Click.
- Oct. 2015 Fitness Technology That Helps the Blind Get Moving, MIT Technology Review.
- Oct. 2013 Exploring the use of an aerial robot to guide blind runners, ACM SIGACCESS Newsletter.
- Oct. 2013 SIMVIZ simulates visual impairments with see-through VR display, GizMag Magazine
- Aug. 2013 Camera Lets Blind People Navigate with Gestures, MIT Technology Review.
- Aug. 2013 Blind games: The next battleground in Accessibility, Polygon.
- July 2013 For blind campers, a first chance to swim and canoe, Reuters.
- June 2013 Game Accessibility: Enabling Everyone to Play, IEEE Computer.
- Jan. 2013 Blinded by sun? Let your steering wheel guide you, New Scientist.
- May 2012 Robot sensing and smartphones help blind navigate, New Scientist.
- May 2012 Navatar system could help the blind navigate indoors, Gizmag
- July 2011 Video Games are all Greek to Eelke Folmer, Perkins School of the Blind Newsletter.
- Dec. 2011 Putting the 'We" in Wii for Children with Visual Impairments, The President's Challenge Newsletter
- June 2010 VI Fit Is Wii Sports For The Blind. Kotaku.
- June 2010 Video Game to Get Blind Children Moving and Laughing Smarter Technology.
- May 2010 Putting the 'we' in Wii for blind gamers. CNET.
- May 2010 Being Blind doesn't mean you can't play videogames. Games Radar.
- Nov. 2008 Hacks Allowing Disabled Gamers To Play Guitar Hero. SlashDot.
- Nov. 2008 Frets on Fire for the Blind. Kotaku.
- June 2008 Guitar Hero for the Blind. Wired.

## **INVITED TALKS**

- May 2022 VR Research at the University of Nevada, Reno, VA/ UNR Virtual Reality Symposium, Online.
- Oct. 2021 VR Sickness and Locomotion, Embrace the Metaverse Global Symposium, Sogang University, South Korea.
- Mar. 2014 Augmenting the Capabilities of Blind Users using Wearable Computing, Seminar, UC Berkeley, USA.
- Jan. 2014 Indoor Navigation for Blind Users, Tech Talk, Google, Mountain View, USA.
- Jan. 2014 Game Accessibility, Seminar, EA games, Sacramento, USA.
- Dec. 2013 Playing Games without Visual Feedback, Games Talk, ExertionLab, Melbourne, Australia.
- Dec. 2013 Exercise games for Blind Kids, Accessible Sports Festival, Melbourne, Australia.
- Oct. 2013 Game Accessibility, Seminar, Hanze Hogeschool, Groningen, Netherlands.
- July 2013 Augmenting Perception Capabilities of Blind Users, ESTVI Workshop, Smith-Kettlewell.
- June 2013 Real-Time Energy Expenditure Prediction for Exergames, Games 4 Health Conference, Boston
- May 2013 Playing Games without Visual Feedback, Inventing the Future of Games: Speaker Series, UC Santa Cruz
- Nov. 2011 Game Interfaces for Users with Visual Impairments, Research Colloquium, DePaul University.
- Jan. 2011 Tactile/Audio Active Play Games for Blind Children Nintendo's Power of Play Symposium, San Francisco.

## TEACHING

CS135 Computer Science I CS281 Intro to Game Development CS320 Interaction Design Fall 2006, Spring 2007 Fall 2007-2011, Spring 2007-2009 Spring 2012-13

CS330 Design Patterns	Fall 2010
CS328 Fundamentals of Game Design	Fall 2014
CS425 Capstone Software Engineering	Fall 2016
CS426 Capstone Senior Projects	Spring 2
CS457 Databases	Spring 2
CS480 Computer Graphics	Spring 2
CS491 Ubiquitous Computing	Spring 2
CS484 Virtual Reality	Spring 2
CS709 Topics in CS: Software Architecture Design	Fall 200
CS791 Topics in HCI: Player-Game Interaction	Spring 2

Fall 2010-12,14 Fall 2014, 2015, 2017, 2018, Spring 2017 Fall 2016,2017 Spring 2010,2015,2017 Spring 2013 Spring 2006-2007 Spring 2016 Spring 2017-2022 Fall 2008 Spring 2010-2011,2015

# GRADUATE STUDENTS SUPERVISED

May	2022	Isayas Adhanom, PhD. Exploring Adaptation for Comfortable VR Experiences (PostDoc U of Minnesota)
Aug	2020	Nathan Navarro Griffin, MS. Out of body locomotion (Squanch Games)
May	2019	Majed Al-Zayer, PhD. Universal Usability of Virtual Reality (Meta)
May	2019	James Liu, MS. Evaluation Of Handsbusy Versus Handsfree Virtual Locomotion. (Unknown)
Dec	2017	Hirav Parekh, MS. Optimizing Natural Walking Usage in VR using Redirected Teleportation. (Blue Yonder)
Aug	2017	Walker Spurgeon, MS. Exploring handsfree alternatives for teleportation in VR. (Baker-Hughes)
Aug	2017	Jiwan Bhandari, <b>MS.</b> Navigating Virtual Environments At Scale. ( <b>GE Digital</b> )
May	2017	William Grussenmeyer, PhD. Making Spatial Information Accessible on Touchscreens (Amazon)
Dec	2016	Manju Palathingal, MS. Exploring Wearables for Visually Impaired People. (Intel)
Aug	2016	Sam Tregillus, MS. Handsfree Locomotion Techniques for Mobile VR. (Schneider Electric)
Dec.	2014	Ilias Apostolopoulos, PhD. An Indoor Navigation System for Blind Users. ()
Aug	2014	Halim Çağrı Ateş, <b>MS.</b> Immersive Simulation of Visual Impairments ( <b>Apple</b> ).
May.	2014	Alexander Fiannaca, <b>MS.</b> Augm. Percep. Cap. of Blind Users using Wearable Computing. (Google)
May	2013	Miran Kim, MS. Non-Intrusive Physical Activity Prediction for Exergames. (VGT)
May	2013	Burkay Sucu, <b>MS.</b> A Haptic Steering Interface. ( <b>AppNava</b> )
Dec.	2012	Vinitha Khambadkar, MS. A Gestural UI for Remote Non-visual Spatial Perception. (MicroFocus)
Dec.	2011	Tony Morelli, PhD. Non-Visual Natural User Interfaces. (Professor at Central Michigan U.)
Aug.	2011	Buğra Oktay, MS. Efficient Exploration of Second Life using a Natural Language Interface. (Meta)
Aug.	2011	Navid Fallah, PhD. Mixed Reality Navigation System for Users with Visual Impairments. (DoorDash)
May	2011	Austin Wester, MS. Unsupervised Game Interface Evaluation. (Washoe County School District)
May	2011	Daniel Ramos, <b>MS.</b> Playing A Game With Supplemental Modalities. ( <b>IGT</b> )
Aug.	2009	Manjari Sapre, <b>MS.</b> Making Virtual Worlds accessible to Visually Impaired. (Scientific Games)
May	2009	Dave Carr, <b>MS.</b> Towards Automatic Parallel Game Engine Architectures. ( <b>Google</b> )
May	2009	Bei Yuan, <b>PHD.</b> Towards Generalized Accessibility of Video Games for Visually Impaired. (Apple)
May	2008	Chris Franklin, MS. Less is More! less Interaction, more Accessible. (Lockheed Martin)
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#### CURRENT STUDENTS

May 2023 Anirudha Prithul, **PhD.** Improving Teleportation. May 2024 Hudson Lynam, **PhD.** Augmented Reality Navigation

#### PROFESSIONAL SERVICE

Panelist	National Science Foundation 2007, 2012, 2015, 2016, 2017, 2019-2021.
Program Committee	ACM SIGACCESS Conference on Computers and Accessibility (ASSETS), 2012-16 ACM Tangible Embodied Interaction (TEI), 2014 ACM Human Factors in Computing Systems (CHI), 2016 ACM Computer-Human Interaction in Play, 2017
Conference Organizer	ACM Conference on Computer and Accessibility (ASSETS), 2016 (Local Chair) Games and Software Engineering Workshop (GAS) @ICSE, 2011

	ACM Conference on Computers and Accessibility (ASSETS), 2015 (Doctoral Consortium) ACM Conference on Computer and Accessibility (ASSETS), 2014 (Student research competition) Workshop on Game Accessibility: Xtreme Interaction Design (GAXID) @FDG, 2011
Conference Reviewer	ACM Human Factors in Computing Systems (CHI) 2008–2022 IEEE Symposium on Virtual Reality (VR) 2018-2022 IEEE International Symposium on Mixed and Augmented Reality (ISMAR) 2021-2022 ACM User Interface Software and Technology (UIST) 2012-13,17-21 IEEE Symposium on 3D User Interfaces (3DUI) 2017-2019 ACM Symposium on Virtual Reality Software and Technology (VRST), 2017-2021 ACM SIGACCESS Conference on Computers and Accessibility (ASSETS), 2012-16 ACM International Conference on Intelligent User Interfaces (IUI) 2013, 2015 Graphics Interface (GI), 2011-13 Int. Conference on Tangible, Embedded and Embodied Interaction (TEI), 2011-12,2014 Interactive Tabletops and Surfaces (ITS), 2012 IEEE HAPTICS Symposium, 2011-12,2016
Journal Reviewer	IEEE Transactions on Visualization and Computer Graphics, 2020-2022 ACM Transactions on Accessible Computing, 2015, 2016 ACM Transactions on Applied Perception 2016, 2021, 2022 Foundations and Trends in Human Computer Interaction, 2015 IEEE transactions on human-machine systems 2016 Interacting with Computers, 2011, 2013 Journal of Computer Games Technology, 2011 Pervasive and Ubiquitous Computing, 2011 Journal of Systems and Software, 2006, 2009, 2010 IEEE Software, 2006
UNR Service	UNR CIO search, 2022
Department Service	CSE Department Chair, 2018-Current Graduate Director, 2016-2018 UNR Core curriculum board, 2016-2018 Graduate Committee, 2008-09, 2014-2018 Undergraduate Committee, 2009-2012 Faculty search, 2013, 2015, 2017 Digital Interactive Games Curriculum Committee, 2006-Current Faculty Evaluation Committee, 2009-11, 2016 CSE Website Committee, 2010-13 AD-hoc space Committee, 2014-15