Dr. Stefan Marks, Curriculum Vitae

Associate Professor

School of Future Environments (Huri Te Ao)
Faculty of Design and Creative Technologies (DCT)
Auckland University of Technology

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Education

- *02/2014 – 10/2014:* Certificate in Tertiary Education
  Auckland University of Technology, New Zealand
- *02/2007 – 01/2011:* PhD in Computer Science
  Thesis Title: A Virtual Environment for Medical Teamwork Training With Support for Non-Verbal Communication Using Consumer-Level Hardware and Software
  The University of Auckland, New Zealand
- *10/2002 – 09/2005:* Master of Science in Computer Science, Human-Computer Interaction
  Thesis Title: Evolving autonomous locomotion of virtual characters in a simulated physical environment via neural networks and evolutionary strategies
  University of Applied Sciences Gelsenkirchen, Germany
- *10/1994 – 09/1998:* Diplom in Technical Microcomputer Science
  University of Applied Sciences Gelsenkirchen, Germany

Research Interests

- Primary
  - Virtual and Interactive Environments
  - 3D Data Visualisation
  - 3D Graphics
  - Human-Computer Interaction
- Secondary
  - Simulation of Physical Processes
  - Serious Games
  - Robotics and Electronics
  - Computer Science Education

Work and Teaching Experience

- *Since 01/2022:* Senior Lecturer above the Bar at Auckland University of Technology
- *01/2020 – 01/2021:* Postgraduate Programme Leader, Creative Technologies, School of Future Environments, Faculty of Design and Creative Technologies, Auckland University of Technology
- *Since 10/2024:* Associate Professor at Auckland University of Technology
- *01/2016 – 09/2024:* Senior Lecturer at Auckland University of Technology
  - 2024 S2:
    - Synthetic Realities (CTEC601)
    - Physical Computing (ENEL599)
  - 2024 S1:
    - Synthetic Realities (CTEC601)
    - Virtual and Immersive Environments (COMP770)
  - 2023 S1:
    - Programming for Creativity (COMP570)
    - Virtual and Immersive Environments (COMP770)
  - 2022 S2:
    - Physical Computing (ENEL599)
    - Synthetic Realities (CTEC601)
    - Special Topic B (CTEC809) – 3D Artworks in Metaverse Advertising
  - 2022 S1:
    - Programming for Creativity (COMP570)
    - Virtual and Immersive Environments (COMP770)
  - 2021 S2:
    - Physical Computing (ENEL599)
    - Synthetic Realities (CTEC601)
    - Research Practicum B (CTEC706) – Telemetry for Pest Control Devices
  - 2021 S1:
    - Programming for Creativity (COMP570)
    - Virtual and Immersive Environments (COMP770)
    - Special Topic B (CTEC809) – BIM to VR Workflow
  - 2020 S2:
    - Physical Computing (ENEL599)
    - Special Topic A (CTEC808) – Virtual Production
  - 2020 S1:
    - Programming for Creativity (COMP570)
    - Virtual and Immersive Environments (COMP770)
  - 2019 S2:
    - Physical Computing (ENEL599)
    - Research Practicum 2 (CTEC708) – Glove for VR visualisation gesture control
  - 2019 S1:
    - Programming for Creativity (COMP570)
    - Virtual and Immersive Environments (COMP770)
    - Research Practicum 1 (CTEC706) – Gesture input for VR visualisations

- 2018 S2:
  - Physical Computing (ENEL599)
  - Synthetic Realities (CTEC601)
  - Research Practicum 2 (CTEC708) – Evaluation of Machine Learning principles for Gesture Recognition in VR
- 2018 S1:
  - Programming for Creativity (COMP570)
  - Virtual and Immersive Environments (COMP770)
  - Research Practicum 1 (CTEC706) – TensorFlow Gesture Recognition for VR
- 2017 S1:
  - Synthetic Realities (CTEC601)
  - Virtual and Immersive Environments (COMP770)
  - Research Practicum 1 (CTEC706) – UI/UX Design for MR technology
  - Special Topic A (CTEC808) – MR Technology for Museums
  - Special Topic A (CTEC808) – Visualisations of Social Networks
- 2016 S2:
  - Physical Computing (ENEL599)
  - Research Practicum 1 (CTEC706) – VR Technology Review, VR in Arts Therapy review
- 2016 S1:
  - Programming for Creativity (COMP570)
  - Creative Technologies Studio III and V (CTEC607 and CTEC708)
  - Virtual and Immersive Environments (COMP770)
  - Research Practicum 1 (CTEC706) – Gesture input, Cave rendering
  - Special Topic A (CTEC808) – Parallel Robots

- *02/2011 – 01/2016:* Lecturer at Auckland University of Technology
  - 2015 S2:
    - Creative Technologies Studio II (CTEC503) – Year 1 Leader
    - Physical Computing (ENEL599)
    - Creative Technologies Studio IV and VI (CTEC608, CTEC709)
    - Research Practicum 1 (CTEC706) – Virtual Caves
    - Reading (CTEC807) – Virtual Reality Content and Devices
  - 2015 S1:
    - Creative Technologies Studio I (CTEC501) – Year 1 Leader
    - Programming for Creativity (COMP570)
    - Virtual and Immersive Environments (COMP770)
    - Special Topic A (CTEC808) – Haptic Feedback Glove
  - 2014 S2:
    - Creative Technologies Studio II (175004) – Year 1 Leader
    - Physical Computing (175007)
    - Virtual and Immersive Environments (177006)
    - Partial teaching for 3D Visualisation (ARDN500)
  - 2014 S1:
    - Creative Technologies Studio I (175001) – Year 1 Leader
    - Programming for Creativity (175003)
    - Creative Technologies Studio III and V (176001 and 177001)
  - 2013 S2:
    - Physical Computing (175007)
    - Simulated, Immersive and Interactive Environments II (176008)

- 2013 S1:
  - Programming for Creativity (175003)
  - Creative Technologies Studio III and V (176001 and 177001)
  - Game Programming (717310)
- 2012 S2:
  - Programming 2 (405704)
  - Game Programming (717310)
- 2012 S1:
  - Programming 2 (405704)
  - Computer Organisation (715187)
- 2011 S2:
  - Programming 2 (405704)
  - Computer Graphics (716288)
- 2011 S1:
  - Programming 2 (405704)
  - Computer Graphics and Animation (407918)

- *03/2008 – 11/2010:* Tutor and marker at The University of Auckland
  - Principles of Computer Science (CompSci 105)
  - Computer Graphics & Image Processing (CompSci 373)
  - Advanced Computer Graphics (CompSci 715)
- *03/2009 – 11/2010:* ObserverXT consultant for Noldus Information Technology
  Technical support and project assistance for the Faculty of Education
- *05/2006 – 10/2006:* Software developer, Four2B GmbH
  Creation of an image processing framework for automated testing of mobile phones
- *01/2001 – 04/2006:* Soft- and hardware developer, ET ELECTROTECHNOLOGY GmbH
  Team-based development of embedded systems and visualisation software for the steel producing industry
- *10/1997 – 12/2000:* Soft- and hardware developer, MBS GmbH
  Team leader of the R&D department for mobile weighing systems
- *06/1994 – 09/1994:* Internship, Ruhrkohle AG, Auguste Victoria
  Installation and maintenance of Unix process visualisation systems for a colliery
- *01/1994 – 04/1994:* Internship, Evonik Industries

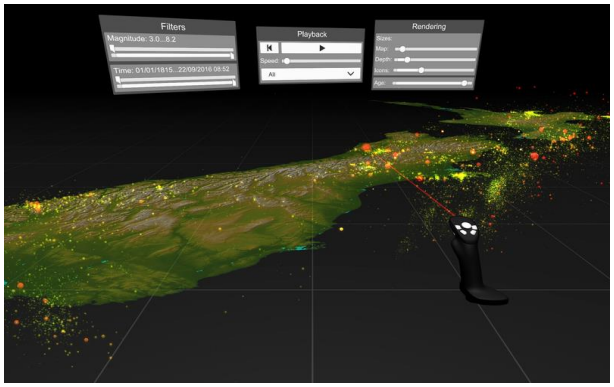
Current Projects

Immersive VR Visualisation (2012-current)

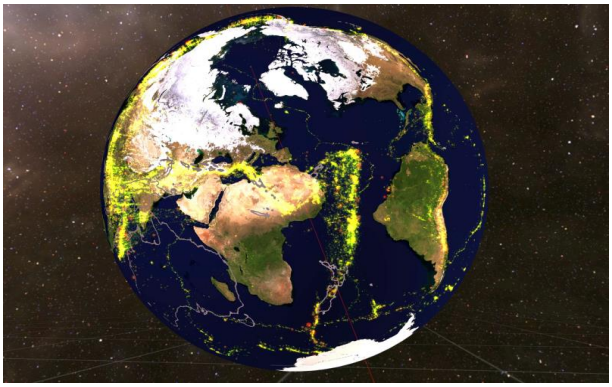
My main research focus is the fusion of 3D data visualisation and Virtual/Mixed/Augmented Reality technology (e.g., Vive, Oculus Rift, Hololens) into immersive, interactive multi-user and multi-device visualisations.

Over the last years, in cooperation with various schools and researchers within and outside of AUT, I have developed several visualisations for different expert domains, such as artificial neural networks, earthquake datasets, bioengineering datasets, and point-clouds. The applications have been used by experts as well as undergraduate and postgraduate students for data exploration, education, model parameterisation, and other purposes.

A specific focus of my work is to combine different visualisation technologies and end-user devices into a coherent solution, so that, e.g., an instructor with a tablet PC can assist and guide a student who is using a virtual or mixed reality headset, while the other students in the class can follow and navigate the 3D environment each with their own mobile devices.

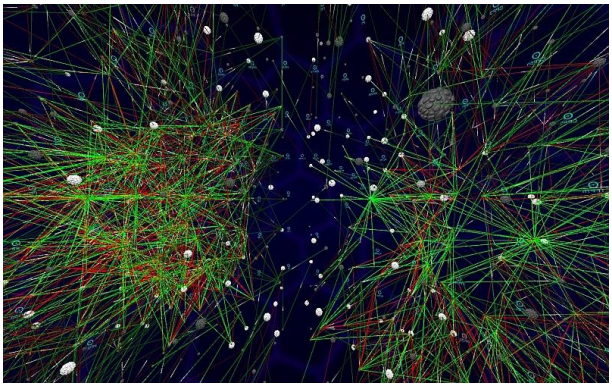


Realtime interactive 3D Visualisation of 400000 Earthquakes in New Zealand from 1900 until now



Realtime interactive 3D Visualisation of 400000 Earthquakes globally from 1900 until now

Navigating a Virtual Environment using the Oculus Rift and Motion Capture technology



Realtime 3D Visualisation of an artificial 3D neural network with 4000 neurons and 45000 connections

Past Projects

Haupapa: The Chilled Breath of Rakamaomao (2022-2023)

This multidisciplinary project joined a live weather data stream of stations around Haupapa/Tasman Glacier with video and audio footage of the glacier itself, raising awareness of the changing environmental conditions that slowly erode this ancient entity. I developed the website which uses a combination of PHP and P5.js to provide different levels of pseudo-live data streams for driving the animations and sounds in real-time. The PHP backend polls the weather stations in 10min intervals and interpolates the data for the P5.js frontend queries. The data can also be pulled from a one-year database of historical records, wrangled and analysed in R, in case the station link is interrupted. The frontend uses WebGL for warping and merging of images, and a custom sound engine for playing, queuing and merging audio recordings of the glacier with spoken words for the major wind names.

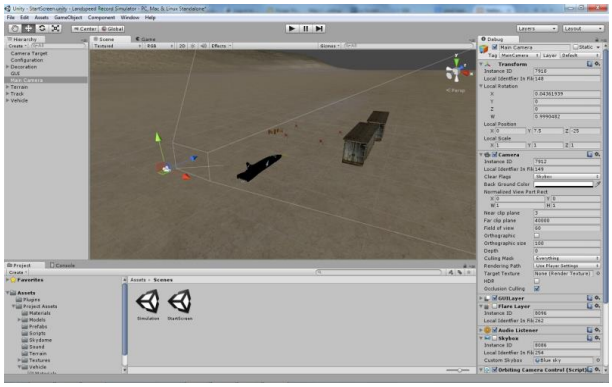
https://haupapa.space

Sample screenshot of the site with data plots

Jetblack (2012-2013)

This project was an investigation into the design of a cockpit for a New Zealand landspeed record vehicle. What is the best design for controls and instruments and the flow of information in a vehicle that travels at supersonic speeds? How can we organise and present vital vehicle information to the pilot in a non-intrusive, but physiologically effective manner?

For the project, a life-sized cockpit was built, running a physical simulation of the vehicle that could be controlled with a yoke that provided force feedback. A control centre software allows the monitoring and manipulation of the simulated vehicle during each run, e.g., triggering fires or component failures to test the reaction time of the pilot given a specific layout of the warning signals and indicators.



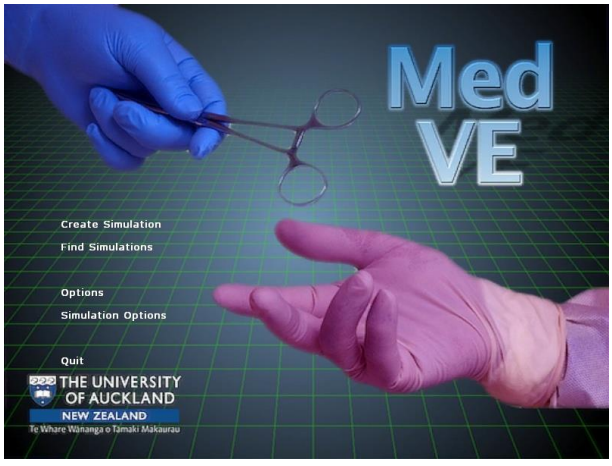
The simulator in the Unity engine

Pilot's view of the Jetblack simulator

Virtual Medical Teamwork Training (2007-2011)

This is my PhD project, developed between 2007 and 2011 at The University of Auckland.

It is a Serious Game, using the Source Engine as a framework for training medical teams to cooperate during a surgical task. The specific focus was on incorporating nonverbal cues like head gestures into the simulation to investigate the effect on realism and efficiency. In a user study with 30 participants, we found that the gestures did not significantly influence the performance of the teamwork, but increased the perceived immersion and realism of the simulation.



Start screen of the training program

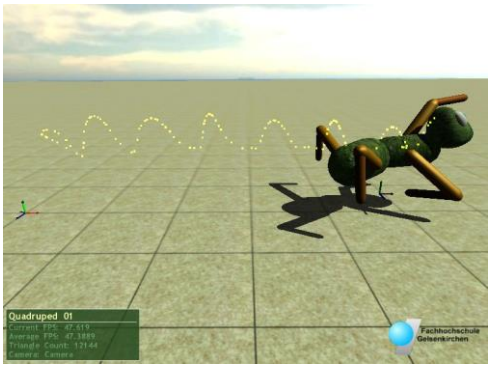
Screenshot of the simulation with three avatars

Learning to Walk (2004-2005)

This is my Master's Thesis project, developed between 2004 and 2005 at the University of Applied Sciences Gelsenkirchen (now the University of Applied Sciences Westphalia), Germany.

It uses a simulated virtual reality environment to evolve walking patterns of virtual 3D creatures using evolutionary strategies and neural networks. The original idea was to investigate whether or not the combination of the above technologies would result in a locomotion pattern that would be similar or superior to patterns created by animators. The results were unsatisfactory in that it proved hard to define a “good” locomotion in mathematical terms that the evolutionary algorithms needed for the selection process.

3D Head-Mounted-Display for immersive exploration of the Virtual Environment



A quadruped moving in a straight line

Publications

Books and Book Chapters

Ayache, J., Heym, N., Sumich, A., Rhodes, D., Connor, A. M., & Marks, S. (2021). Feeling closer despite the distance: How to cultivate togetherness within digital spaces. In D. Wheatley, I. Hardill, & S. Buglass (Eds.), *Handbook of research on remote work and worker well-being in the post-COVID-19 era* (pp. 243-264). Hershey, PA, USA: IGI Global. doi:10.4018/978-1-7998-6754-8.ch014

Marks, S. (2018). Virtual Reality. In B. Warf (Ed.), *The SAGE Encyclopedia of the Internet* (Vol. 3, pp. 906-911). Thousand Oaks: SAGE. doi:10.4135/9781473960367.n264

Sengupta, N., Ramos, J. I. E., Tu, E., Marks, S., Scott, N., Weclawski, J., ... Abbott, A. (2018). From von Neumann architecture and Atanasoff's ABC to neuro-morphic computation and Kasabov's NeuCube: Principles and implementations. In V. Sgurev, V. Piuri, & V. Jotsov (Eds.), *Studies in Computational Intelligence - Learning Systems: From Theory to Practice* (pp. 1-28). Springer, Cham. doi:10.1007/978-3-319-75181-8_1

Connor, A. M., & Marks, S. (2016). Creative Technologies for Multidisciplinary Applications. IGI Global. doi:10.4018/978-1-5225-0016-2

Connor, A. M., Sosa, R., Karmokar, S., Marks, S., Buxton, M., Gribble, A. M., ... Footit, J. (2016). Exposing core competencies for future creative technologists. In A. M. Connor, & S. Marks (Eds.), *Creative Technologies for Multidisciplinary Applications* (pp. 373). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0016-2.ch015

Connor, A. M., Sosa, R., Marks, S., & Jackson, A. G. (2016). Problem solving at the edge of disciplines. In C. Zhou (Ed.), *Handbook of Research on Creative Problem-Solving Skill Development in Higher Education*. Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0643-0.ch010

Marks, S., & Blagojevic, R. (Eds.) (2015). Proceedings of the Sixteenth Australasian User Interface Conference (AUIC 2015) (Vol. 162). Sydney: Australian Computer Society Inc. Retrieved from http://crpit.com/Vol162.html

Connor, A. M., Marks, S., & Walker, C. (2015). Creating Creative Technologists: Playing With(in) Education. In N. Zagalo, & P. Branco (Eds.), *Creativity in the Digital Age*. Springer. doi:10.1007/978-1-4471-6681-8_3

Connor, A. M., Berthelsen, C., Karmokar, S., Marks, S., Kenobi, B., & Walker, C. (2014). An unexpected journey: Experiences of learning through exploration and experimentation. In T. T. Jachna, E. McLafferty, & Y. S. Tzvetanova (Eds.), *Action!-Doing Design Education*. Hong Kong. doi:10.13140/2.1.2688.0805

Wünsche, B., & Marks, S. (2014). Proceedings of the Fifteenth Australasian User Interface Conference (AUIC 2014) (Vol. 150). Sydney: Australian Computer Society Inc. Retrieved from http://crpit.com/Vol150.html

Journal Articles

Lee, Y., Connor, A. M., & Marks, S. (2024). Mixed interaction: Evaluating user interactions for object manipulations in virtual space. *Journal on Multimodal User Interfaces*. doi:10.1007/s12193-024-00431-2

Gil Parga, S., Singh, U., Gutierrez, J., & Marks, S. (2023). Pedagogical design in education using augmented reality: A systematic review. *Interactive Learning Environments*, *0*(0), 1–18. doi: 10.1080/10494820.2023.2195445

Kruse, J., Connor, A. M., & Marks, S. (2022). Evaluation of a multi-agent 'human-in-the-loop' game design system. *ACM Transactions on Interactive Intelligent Systems*, 12(3), 1-26. doi:10.1145/3531009

Ayache, J., Connor, A., Marks, S., Kuss, D. J., Rhodes, D., Sumich, A., & Heym, N. (2021). Exploring the "Dark Matter" of Social Interaction: Systematic Review of a Decade of Research in Spontaneous Interpersonal Coordination. *Frontiers in Psychology*, *12*. https://www.frontiersin.org/article/10.3389/fpsyg.2021.718237

Kruse, J., Connor, A.M. & Marks, S. (2021). An Interactive Multi-Agent System for Game Design. In *The Computer Games Journal*. doi:10.1007/s40869-020-00119-z

Nikolai, J., Bennett, G., Marks, S., & Maynard, G. (2019). Active learning and teaching through digital technology and live performance; 'choreographic thinking' as art practice in the tertiary sector. In *International Journal of Art and Design Education*, 16 pages. doi:10.1111/jade.12181

Marks, K., & Marks, S. (2018). Drawing on Hope: A Virtual reality Project Workshop. In *Australian and New Zealand Journal of Arts Therapy,* 13(1 and 2), 68-70. Retrieved from http://www.anzacata.org/

Marks, K., Marks, S., & Brown, A. (2017). Step into my (virtual) world: An (auto)ethnographic exploration of virtual reality drawing applications for arts therapy. In *Australian and New Zealand Journal of Arts Therapy (ANZJAT).*

Marks, S. (2017). Immersive visualisation of 3-dimensional spiking neural networks. In *Evolving Systems*, *8*(3), 193-201. doi:10.1007/s12530-016-9170-8

Kasabov, N., Scott, N., Tu, E., Marks, S., Sengupta, S., Capecci, E., ... Yang, J. (2016). Evolving spatio-temporal data machines based on the NeuCube neuromorphic framework: Design methodology and selected applications. In *Neural Networks: Special Issue on Learning in Big Data*. doi:10.1016/j.neunet.2015.09.011

Foottit, J., Brown, D., Marks, S., & Connor, A. M. (2016). Development of a wearable haptic game interface. In *EAI Endorsed Transactions on Creative Technologies*, *3*(6). doi:10.4108/eai.25-4-2016.151165

Foottit, J., Brown, D., Marks, S., & Connor, A. M. (2016). A wearable haptic game controller. In *International Journal of Game Theory and Technology*, *2*(1), 1-19. doi:10.5121/ijgtt.2016.2101

Marks, S., Windsor, J. A., & Wünsche, B. (2012). Head Tracking Based Avatar Control for Virtual Environment Teamwork Training. In *Journal of Virtual Reality and Broadcasting*, 9.2012. Retrieved from http://www.jvrb.org/9.2012/3560

Henriques, A., Wünsche, B., & Marks, S. (2007). An investigation of meshless deformation for fast soft tissue simulation in virtual surgery applications. In *Computer-Assisted Radiology and Surgery*, *2*(1 SUPPL.), S169-S171. doi:10.1007/s11548-007-0091-7

Conference Proceedings

Hooper, S., Wünsche, B., Marks, S., Luxton-Reilly, A., & Denny, P. (2024). Projects and Portfolios—An Educator's Reflections on the Summative Assessments in a Game Programming Course. *SIGGRAPH Asia 2024 Educator's Forum*, 1–8. doi:10.1145/3680533.3697071

Marks, S., & Gil Parga, S. (2023). Computer graphics and extended reality courses for the programmophobic. In J. Kim, M. Aoki, & G. Bennett (Eds.), *Proceedings of SIGGRAPH Asia 2023 Educator's Forum*. Sydney: ACM. doi:10.1145/3610540.3627004

Marks, S., Randerson, J., Shearer, R., Bull, R., & Purdie, H. (2023). Mākū, te hā o Haupapa: Moisture, the breath of Haupapa. In S. Spencer (Ed.), *Proceedings of SA'23: SIGGRAPH Asia 2023 Art Gallery*. Sydney: ACM. doi:10.1145/3610537.3622943

Alex, M., Lottridge, D., Lee, J., Marks, S., & Wünsche, B. (2020). Discrete versus continuous colour pickers impact colour selection in virtual reality art-making. In N. Ahmadpour, T. Leong, & B. Ploderer (Eds.), *Proceedings of the 32nd Australian Conference on Human-Computer-Interaction (OzCHI 2020)* (pp. 158-169). Sydney: Association for Computing Machinery. doi:10.1145/3441000.3441054

Phan, T., Ramhormozian, S., Clifton, C., MacRae, G., Dhakal, R., Jia, L. -J., & Marks, S. (2020). Development of a virtual construction approach for steel structures considering structural and non- structural elements, and installation equipment. In A. Ghaffarian Hoseini, A. Ghaffarianhoseini, & N. Naismith (Eds.), *The 54th International Conference of the Architectural Science Association* (pp. 405-414). Auckland. Retrieved from https://anzasca.net

Alex, M., Lottridge, D., Lee, J., Marks, S., & Wünsche, B. (2020). Discrete versus continuous colour pickers impact colour selection in virtual reality art-making. In N. Ahmadpour, T. Leong, & B. Ploderer (Eds.), *Proceedings of the 32nd Australian Conference on Human-Computer-Interaction (OzCHI 2020)* (pp. 158-169). Sydney: Association for Computing Machinery. doi:10.1145/3441000.3441054

Marks, S., & White, D. (2020). Multi-Device Collaboration in Virtual Environments. In *ICVARS 2020: Proceedings of the 2020 4th International Conference on Virtual and Augmented Reality Simulations* (pp. 35-38). Sydney. doi:10.1145/3385378.3385381

Lee, Y., Marks, S., & Connor, A. M. (2020). An evaluation of the effectiveness of virtual reality in air traffic control. In *Proceedings of the 4th International Conference on Virtual and Augmented Reality Simulations*. Sydney.

Magdics, M., White, D., & Marks, S. (2018). Extending a virtual reality nasal cavity education tool with volume rendering. In M. J. W. Lee, S. Nikolic, M. Ros, J. Shen, L. C. U. Lei, G. K. W. Wong, & N. Venkatarayalu (Eds.), *Proceedings of 2018 IEEE International Conference on Teaching, Assessment, and Learning for Engineering (TALE)* (pp. 811-814). Wollongong, New South Wales. doi:10.1109/TALE.2018.8615248

Marks, S., White, D., & Magdics, M. (2018). Evaluation of a virtual reality nasal cavity education tool. In M. J. W. Lee, S. Nikolic, M. Ros, J. Shen, L. C. U. Lei, G. K. W. Wong, & N. Venkatarayalu (Eds.), *Proceedings of 2018 IEEE International Conference on Teaching, Assessment, and Learning for Engineering (TALE)* (pp. 193-198). Wollongong, New South Wales. doi:10.1109/TALE.2018.8615344

Bennett, G., Denton, A., Marks, S., & Nikolai, J. (2017). "Choreographic thinking" through collaboration, hope and curiosity: A methodology for opening up the potential for discovery. In *NODE 2017*. Frankfurt. Retrieved from https://17.nodeforum.org/events/choreographic-coding-reloaded/

Marks, K., & Marks, S. (2017). Drawing on Hope: A Virtual Reality Project. In *ANZATA/ACATA Conference 2017*. Melbourne.

Marks, S., White, D., & Singh, M. (2017). Getting up your nose: A virtual reality education tool for nasal cavity anatomy. In *SIGGRAPH Asia 2017 Symposium on Education Proceedings*. Bangkok: ACM. doi:10.1145/3134368.3139218

Shaw, L. A., Tourrel, R., Wünsche, B., Lutteroth, C., Marks, S., & Buckley, J. (2016). Design of a virtual trainer for exergaming. In *ACM International Conference Proceeding Series*. The Australian National University: Association for Computing Machinery. doi:10.1145/2843043.2843384

Shaw, L. A., Wünsche, B., Lutteroth, C., Marks, S., & Callies, R. (2015). Challenges in Virtual Reality Exergame Design. In Marks, Stefan, & Blagojevic, Rachel (Eds.), *Conferences in Research and Practice in Information Technology (CRPIT)* Vol. 162 (pp. 94 pages). Sydney, Australia: Australian Computer Society Inc. Retrieved from http://crpit.com/Vol162.html

Shaw, L. A., Wünsche, B., Lutteroth, C., Marks, S., Buckley, J., & Corballis, P. (2015). Development and Evaluation of an Exercycle Game Using Immersive Technologies. In Maeder, Anthony, & Warren, Jim (Eds.), *Conferences in Research and Practice in Information Technology (CRPIT)* Vol. 164 (pp. 222 pages). Sydney, Australia: Australian Computer Society Inc. Retrieved from http://crpit.com/Vol164.html

Marks, S., Estevez, J. E., & Connor, A. M. (2014). Towards the Holodeck: Fully Immersive Virtual Reality Visualisation of Scientific and Engineering Data. In *29th International Conference on Image and Vision Computing New Zealand (IVCNZ)* 2014 (pp. 42-47). Hamilton, New Zealand: ACM. doi:10.1145/2683405.2683424

Foottit, J., Brown, D., Marks, S., & Connor, A. M. (2014). An Intuitive Tangible Game Controller. In K. Nesbitt, & K. Blackmore (Eds.), *The 10th Australasian Conference on Interactive Entertainment (IE 2014)*. Newcastle, NSW, Australia. doi:10.1145/2677758.2677774

Wellington, R., & Marks, S. (2013). An Ethnographic Study of a High Cognitive Load Driving Environment. In Smith, R., & Wünsche, B. (Eds.), *Proceedings of the 14th Australasian User Interface Conference (AUIC 2013)* Vol. 139 (pp. 121-122). Adelaide, Australia: Australian Computer Society Inc.. Retrieved from http://crpit.com/Vol139.html

Marks, S., & Wellington, R. (2013). Experimental Study of Steer-by-Wire Ratios and Response Curves in a Simulated High Speed Vehicle. In Smith, R., & Wünsche, B. (Eds.), *Proceedings of the 14th Australasian User Interface Conference (AUIC 2013)* Vol. 139 (pp. 123-124). Adelaide, Australia: Australian Computer Society Inc. Retrieved from http://crpit.com/Vol139.html

Marks, S., Windsor, J. A., & Wünsche, B. (2012). Using Game Engine Technology for Virtual Environment Teamwork Training. In Skala, V. (Ed.), *WSCG '2012 Conference Proceedings – Part 1* (pp. 169-177). Conference website: WSCG Digital Library. Retrieved from http://wscg.zcu.cz/DL/wscg_DL.htm

Marks, S., Windsor, J. A., & Wünsche, B. (2012). Design and Evaluation of a Medical Teamwork Training Simulator using Consumer-Level Equipment. In J.D. Westwood (Ed.), *Medicine Meets Virtual Reality 19* (pp. 273-279). Newport Beach, California: IOS Press. doi:10.3233/978-1-61499-022-2-273

Marks, S., Windsor, J. A., & Wünsche, B. (2011). Head tracking based avatar control for virtual environment teamwork training. In *GRAPP 2011 – Proceedings of the International Conference on Computer Graphics Theory and Applications* (pp. 257-269). Vilamoura, Algarve, Portugal. Retrieved from http://www.grapp.visigrapp.org/Abstracts/2011/GRAPP_2011_Abstracts.htm

Marks, S., Windsor, J. A., & Wünsche, B. (2010). Evaluation of the Effectiveness of Head Tracking for View and Avatar Control in Virtual Environments. In *2010 25th International Conference Image and Vision Computing New Zealand, IVCNZ 2010 – Conference Proceedings* (pp. 1-8). Queenstown, New Zealand: IEEE. doi:10.1109/IVCNZ.2010.6148801

Marks, S., Windsor, J. A., & Wünsche, B. (2009). Optimisation and comparison framework for monocular camera-based face tracking. In *2009 24th International Conference Image and Vision Computing New Zealand, IVCNZ 2009 – Conference Proceedings* (pp. 243-248). Wellington, New Zealand: IEEE. doi:10.1109/IVCNZ.2009.5378402

Marks, S., Windsor, J. A., & Wünsche, B. (2009). Enhancing Virtual Environment-Based Surgical Teamwork Training with Non-Verbal Communication. In *GRAPP 2009 – Proceedings of the 4th International Conference on Computer Graphics Theory and Applications* (pp. 361-366). Lisboa, Portugal: INSTICC Press.
Retrieved from http://hdl.handle.net/10292/3454

Marks, S., Windsor, J. A., & Wünsche, B. (2009). Enhancing Virtual-Environment-Based Teamwork Training with Non-Verbal Communication. In Siemens, G., & Fulford, C. (Eds.), *Proceedings of World Conference on Educational Multimedia, Hypermedia and Telecommunications 2009* (pp. 4133-4144). Honolulu, Hawaii: AACE. Retrieved from http://editlib.org/p/32078/

Marks, S., Windsor, J. A., & Wünsche, B. (2008). Camera based face tracking for enhancing surgical teamwork training with non-verbal communication. In *23rd International Conference Image and Vision Computing New Zealand, IVCNZ* (pp. 7 pages). Lincoln, New Zealand: IEEE. doi:10.1109/IVCNZ.2008.4762122

Marks, S., Windsor, J. A., & Wünsche, B. (2008). Evaluation of Game Engines for Simulated Clinical Training. In Holland, J, Nicholas, A., & Brignoli, D. (Eds.), *New Zealand Computer Science Research Student Conference (NZCSRSC) 2008*. Christchurch, New Zealand: Canterbury University. Retrieved from http://nzcsrsc08.canterbury.ac.nz/site/proceedings/NZCSRSC_2008_Proceedings.pdf

Marks, S., Windsor, J. A., & Wünsche, B. (2007). Collaborative Soft Object Manipulation for Game Engine-Based Virtual Reality Surgery Simulators. In *22nd International Conference Image and Vision Computing New Zealand, IVCNZ 2007* (pp. 205-210). Hamilton, New Zealand: University of Waikato. Retrieved from http://digital.liby.waikato.ac.nz/conferences/ivcnz07/papers/ivcnz07-paper38.pdf

Marks, S., Windsor, J. A., & Wünsche, B. (2007). Evaluation of game engines for simulated surgical training. In *Proceedings of the 5th International Conference on Computer Graphics and Interactive Techniques in Australia and Southeast Asia* (pp. 273-280). Perth, Australia. doi:10.1145/1321261.1321311

Conference Presentations

Marks, K., & Marks, S. (2017). Drawing on Hope: A Virtual Reality Project. In *ANZATA/ACATA Conference 2017*. Melbourne.

Bennett, G., Denton, A., Marks, S., & Nikolai, J. (2017). "Choreographic thinking" through collaboration, hope and curiosity: a methodology for opening up the potential for discovery. In *NODE 2017*. Frankfurt. Retrieved from https://17.nodeforum.org/events/choreographic-coding-reloaded/

Marks, S., & Marks, K. (2016). Step into my (virtual) world. In *Society for Mental Health Research (SMHR) Conference 2016*. Sydney.

Marks, S., & Marks, K. (2016). Step into my (virtual) world. In J. Segedin (Ed.), *Festival of Artful Transitions*. Christchurch.

Marks, S., & Marks, K. (2016). Step into my (virtual) world. In J. Segedin (Ed.), *Artful Transitions - ANZATA 2016 Symposium Programme*. Christchurch. Retrieved from https://www.anzata.org/resources/Files/11.Events/PastEvents/Chch16_Programme-Nov.pdf

Marks, S., Estevez, J., & Scott, N. (2015). Immersive Visualisation of 3-Dimensional Neural Network Structures. In *13th International Conference on Neuro-Computing and Evolving Intelligence (NCEI) 2015*. Auckland. Retrieved from http://www.kedri.aut.ac.nz/conferences/ncei15

Marks, S., Windsor, J. A., & Wünsche, B. (2009). The Impact of Non-Verbal Communication in Virtual-Environment-Based Teamwork Training. In *SimTecT 2009 Health Simulation Conference*. Melbourne, Australia. Retrieved from http://www.simulationaustralia.org.au/archive/simtect/2009health/papers.htm

Marks, S., Windsor, J. A., & Wünsche, B. (2009). Enhancing Virtual Environment-Based Surgical Teamwork Training with Non-Verbal Communication. In *New Zealand Computer Science Research Student Conference (NZCSRSC) 2009*. Auckland. Retrieved from http://nzcsrsc09.auckland.ac.nz/programme

Marks, S., Conen, W., & Lux, G. (2006). Evolving autonomous locomotion of virtual characters in simulated physical environment via neural networks and evolutionary strategies. In *Proceedings of the ninth 3IA International Conference on Computer Graphics and Artificial Intelligence 3iA2006* (pp. 183-190). Limoges, Paris. Retrieved from http://3ia.teiath.gr/3ia_previous_conferences_cds/2006/Papers/ShortPaper01.html

Other

Randerson, J., Shearer, R., Sheehan, M., Marks, S., Purdie, H., Bull, R., Himona, HTT (2022). Haupapa: Approaching A Glacier. He mahi toi, he pūtaiao me ngā atua, Art, science and the atua. Te Tuhi and LASER (Leonardo Art Science Evening Rendezvous), Auckland, New Zealand, https://leonardo.info/civicrm/event/info%3Fid%3D759%26reset%3D1

Marks, S. (2011). Virtual environment for and physical simulation of a supersonic land speed record vehicle [Interactive Vehicle Simulation]. Auckland, New Zealand. Retrieved from http://jetblacklsr.com/car/cockpit-design

Marks, S. (2011). A Virtual Environment for Medical Teamwork Training with Support for Non-Verbal Communication using Consumer-Level Hardware and Software. (Doctoral Thesis, The University of Auckland, Auckland, New Zealand). Retrieved from https://researchspace.auckland.ac.nz/handle/2292/7957

Marks, S. (2007). Don't Shoot Them - Heal Them. First prize winning poster for the Exposure 2007. Retrieved from http://www.auckland.ac.nz/uoa/exposure-past-winners#s2c5

Marks, S. (2006). Evolving autonomous locomotion of virtual characters in a simulated physical environment via neural networks and evolutionary strategies. (Master's Thesis, University of Applied Sciences Gelsenkirchen, Gelsenkirchen, Germany).

Artworks and Installations

Bull, R., Marks, S., Randerson, J., & Shearer, R. (2024). Ngā Rauranga o te Mākū: the data of moisture [Installation]. Khōj: Khōj International Artists' Association. Retrieved from https://khojstudios.org/event/28-north-and-parallel-weathers/

Bull, R., Randerson, J., Shearer, R., Purdie, H., & Marks, S. (2023). Ngā raraunga o te Mākū: te hā o Haupapa [Installation]. Blue Oyster, 16 Dowling St, Ōtepoti: Blue Oyster. Retrieved from https://blueoyster.org.nz/exhibitions/nga-raraunga-o-te-maku-te-ha-o-haupapa/

Randerson, J., Marks, S., Shearer, R., Bull, R., & Purdie, H. (2022). Haupapa: The Chilled Breath of Rakamaomao [Installation]. Te Tuhi/World Weather Network (International Platform): Te Tuhi, Hiraani Himona. Retrieved from https://tetuhi.art/world-weather-network/haupapa-project

Marks, S. (2019). 3D Animation of New Zealand earthquake data for He Iwi Rū | Quake Nation, Museum of New Zealand Te Papa Tongarewa. https://collections.tepapa.govt.nz/document/11027

Marks, S. (2019). VR work at AUT (Nasal cavity, Earthquake visualisation). Université de Nouvelle-Calédonie, Nouméa, New Caledonia: Université de Nouvelle-Calédonie. Retrieved from https://diginova.nc/

Marks, S., & Marks, K. (2017). Drawing on Hope. Frankfurt. Retrieved from https://17.nodeforum.org/events/virtual-reality-meet-greet/

van Melle, G., & Marks, S. (2015, November 18 – December 12). Sleeping with Bees [Installation]. Studio One Toi Tū – Ponsonby, Auckland. Retrieved from http://sleepingwithbees.tumblr.com

Yates, A., van Melle, G., & Marks, S. (2015, August). Fluid States: Performances of unKnowing PSi #21 – Digital Lei [Installation]. Retrieved from http://www.fluidstates.org/article.php?id=184

van Melle, G., & Marks, S. (2015, June 17). PUA [Installation]. Colloredo-Mansfeld Palace – City Gallery Prague. Retrieved from http://pq.cz

van Melle, G., & Marks, S. (2014, December 4). PUA at St Paul Street Gallery [Interactive Projection]. Auckland, New Zealand. Retrieved from http://www.emergentecologies.net

van Melle, Gerbrand., & Marks, S. (2015, March 14). PUA at White Night [Interactive Projection]. Auckland, New Zealand. Retrieved from http://whitenight.aaf.co.nz/event/aut-university

van Melle, Gerbrand., & Marks, S. (2014). Background Visuals for the AUT Rookie 2014 Fashion Show [Software]. Auckland, New Zealand. Retrieved from http://stefanmarks.info/creativetechnology#projects_rookie2014

van Melle, Gerbrand., & Marks, S. (2014). Frozen Waves: Exploring the transformation between sound and object. In Smitheram, M., Smith, A., Joseph, F., & Hamon, J. (Eds.), *Shapeshifting – A Conference on the Transformative Paradigms in Fashion and Textile Design* (pp. 42-43). Auckland, New Zealand. Retrieved from http://hdl.handle.net/10292/8570

van Melle, G., & Marks, S. (2013, December 18). Sound Bites [Sound transformed into 3D shapes made of chocolate]. 39 Symonds St, Auckland. Retrieved from http://colab.aut.ac.nz/events/sound-bites-exhibition-by-gerbrand-van-melle

Presentations

- *09/05/2024:* Invited Lecture for AUT Business School, Master of Business Administration, *MGMT838 Co-ignition: Intelligence, Ideas, Innovation*, Topic: Extended Reality Technology
- *21/09/2023:* Workshop for the Henderson Photographic Society, Topic: The Future of Photography
- *22/08/2023:* Invited Guest Lecture for the *Designing with Data DESIGN240* course at The University of Auckland, Topic: Designing with Data – Case Studies
- *13/01/2023:* Workshop for the Rotary National Science and Technology Forum. Topic: Game Development
- *10/02/2021:* Invited Talk at the XR Workshop 2021. Topic: The Story in the Data – Immersive 3D Visualisations
- *15/01/2021:* Workshop for the Rotary National Science and Technology Forum. Topic: Game Development
- *29/07/2020:* Expert Panel at Techweek 2020. Topic: Virtual Reality in a Covid and Post-Covid World
- *17/01/2020:* Workshop for the Rotary National Science and Technology Forum. Topic: Game Development
- *18/01/2019:* Workshop for the Rotary National Science and Technology Forum. Topic: Game Development
- *19/09/2018:* Invited Lecture for AUT Business School. Topic: The Internet of Things – Promises and Realities
- *12/01/2018:* Workshop for the Rotary National Science and Technology Forum. Topic: Game Development

- *12/07/2017:* Presentation at the Hochschule Bonn-Rhein-Sieg, Institute of Visual Computing, Germany. Topic: VR Research at AUT and Sentience Lab
- *04/07/2017:* Presentation at the Westfälische Hochschule, Germany. Topic: VR Research at AUT and Sentience Lab
- *10/05/2017:* Invited Lecture for AUT Business School. Topic: The Internet of Things – Promises and Realities
- *28/03/2017:* AUT Postgraduate workshop on Research Methods: Provocation Two
- *31/03/2017:* Keynote at the AUT Venture Series, Auckland. Topic: VR Research at AUT and Sentience Lab
- *24/03/2017:* Workshop at Kauri Flats School, Takanini, Auckland. Topic: Creating 3D Models for VR
- *18/03/2017:* Workshop at the Te Papa Talks: Virtual Realities event, Te Papa, Wellington. Topic: VR Research at AUT and in Sentience Lab
- *28/02/2017:* Invited Lecture for AUT Business School. Topic: The Internet of Things – Promises and Realities
- *30/09/2016:* Presentation to the AR/VR Association at the AR/VR Garage, Eden Terrace, Auckland. Topic: VR Research at AUT and in Sentience Lab
- *20/08/2016:* Keynote about 3D technology and workshop about Sound and 3D Shapes at the New Horizons STEM workshop on 3D Technologies for South Auckland Youth.
- *24/06/2016:* Speaker at the ICT Digital Day 2016, AUT. Topic: Sentience Lab and VR Research at AUT
- *14/06/2016:* Speaker at the Digital Spatial Operations Symposium 2016, The University of Auckland. Topic: Sentience Lab – MoCap and VR Research at AUT
- *17/05/2016:* Speaker at the Tripartite Summit 2016, Auckland. Topic: Motion Capture and Virtual Reality at AUT
- *23/11/2015:* Speaker at the AUT Motion Capture Symposium 2015
- *05/09/2015:* Workshop about Sound and 3D Shapes at the New Horizons STEM workshop on 3D Technologies for South Auckland Youth.
- *26/06/2015:* Invited speaker at the Innovation Showcase, organised by Jade Software Corporation, Christchurch, New Zealand. Topic: Virtual Reality
- *25/06 + 03/07/2015:* Workshop about Sound and 3D Shapes at Liston College, Year 11, 12, and 13 Music classes.
- *20/11/2014:* Presentation of a paper at the IVCNZ 2014 in Hamilton, New Zealand
- *26/02/2014:* Marks, S; Estevez, J.E. Interactive Practitioners Meetup – MoCap Special. Auckland, New Zealand. Retrieved 26.2.2014 from http://colab.aut.ac.nz/events/interactive-practitioners-february-meetup-motion-capture-special
- *28/09/2013:* Marks, S.; van Melle, G., Digital Nationz 2013 – New Tech Horizons. Auckland. Retrieved from http://colab.aut.ac.nz/events/digital-nationz/
- *29/01/2013:* Presentation of two posters at the 14th Australasian User Interface Conference (AUIC) 2013 in Adelaide, Australia

- *11/02/2012:* Presentation of my PhD research at the MMVR 19 in Newport Beach, California
- *18/04/2011:* Emerging Technologies – Virtual Environments, Invited lecture at Auckland University of Technology
- *23/11/2009:* Presentation of a poster at the IVCNZ 2009 in Wellington, New Zealand
- *07/09/2009:* Presentation of a paper at the SimTect Health Simulation Conference 2009 in Melbourne, Australia
- *06/07/2009:* Presenter of Computer Science Unplugged at the "Incredible Science" Day
- *06/04/2009:* Presentation of a paper at the NZCSRSC 2009 in Auckland, New Zealand
- *25/11/2008:* Presenter of Computer Science Unplugged at the "Girls Into Science" Day
- *31/10/2008:* Presentation of a paper at the Computer Science Graduate Workshop 2008 at The University of Auckland, New Zealand
- *26/08/2008:* Presentation of a paper at the IVCNZ 2008 in Lincoln, New Zealand
- *07/07/2008:* Presenter of Computer Science Unplugged at the "Incredible Science" Day
- *14/04/2008:* Presentation of a paper at the NZCSRSC 2008 in Christchurch, New Zealand
- *07/12/2007:* Presentation of a poster at the IVCNZ 2007 in Hamilton, New Zealand
- *04/12/2007:* Presentation of a paper at the GRAPHITE 2007 in Perth, Australia
- *26/10/2007:* Presentation of a paper at the Computer Science Graduate Workshop 2007 at The University of Auckland, New Zealand
- *23/05/2006:* Presentation of a paper at the 3iA 2006 in Limoges, France

Awards

- *18/10/2018:* Finalist for the Vice-Chancellor's Award for Teaching Excellence 2018, Auckland University of Technology, Auckland, New Zealand
- *07/12/2017:* DCT Faculty Award for Research 2017, Auckland University of Technology, Auckland, New Zealand
- *09/12/2014:* DCT Faculty Award for Excellence in Learning and Teaching 2014, Auckland University of Technology, Auckland, New Zealand
- *10/12/2013:* Dean's Research Award for Early-Career Researchers, Auckland University of Technology, Auckland, New Zealand
- *31/10/2008:* 1st prize for best presentation and best paper at the Computer Science Graduate Workshop 2008 at The University of Auckland, New Zealand
- *06/12/2007:* 2nd prize at the Computer Science Poster Competition 2007 at The University of Auckland, New Zealand
- *26/10/2007:* 1st prize for best presentation at the Computer Science Graduate Workshop 2007 at The University of Auckland, New Zealand
- *10/10/2007:* 1st prize for best poster at the Exposure 2007
- *06/09/2007:* High Distinction award at the Faculty of Science Postgraduate Poster Competition 2007 at The University of Auckland, New Zealand

Research Grants

- *2023:* The University of Auckland – NZD 20,000 for Virtual Reality Treatment for Complex Regional Pain Syndrome
- *2021:* DCT Faculty Contestable Research Fund 2021 – NZD 15,000 for the BioDesign Lab VR Visualisation Project
- *2018:* DCT Faculty SRIF Contestable Research Fund 2018 – NZD 25,000 for the NeuCube Visualisation Project
- *2017:* DCT Faculty SRIF Contestable Research Fund 2017 – NZD 25,000 for the NeuCube Visualisation Project
- *2016:* DCT Faculty PBRF Contestable Research Fund 2016 – NZD 7,000 for a Master Student Scholarship
- *2015:* Associate Investigator and Project Team Leader in the INTELLECTE 2 Project, funded with NZD 100,000 by the Auckland University of Technology Strategic Research Investment Fund (SRIF)
- *2014:* Associate Investigator and Project Team Leader in the INTELLECTE Project, funded with NZD 260,000 by the Auckland University of Technology Strategic Research Investment Fund (SRIF)
- *2007:* Computer Science Doctoral Scholarship (NZD 23,000 per annum for 3 years)

Supervision

PhD

- *Since 03/2024:* PhD Supervision, Lawrence Joseph Paculan, VR Time Travel and Speculative History
- *Since 02/2023:* PhD Co-Supervision, Katarina Markovic, Historic Artefacts in VR
- *Since 02/2021:* PhD Supervision, Sebastián Gil Parga, AR in Education
- *Since 02/2021:* PhD Supervision, Masaya Todoroki, VR Storytelling and Attention
- *Since 02/2021:* PhD Co-Supervision, Mohamed Atia Abozed Abelrazak, XR in GIS
- *Since 01/2020:* PhD Co-Supervision, Yemon Lee, VR Usability
- *Since 11/2019:* PhD Co-Supervision, Elena Panaita, VR Expression of a Near-Death Experience
- *04/2020 – 01/2024:* PhD Advisor, Julia Ayache (Nottingham Trent University), Exploring the Feeling of Togetherness in Virtual Spaces
- *03/2020 – 09/2022:* PhD Advisor, Hardika Shah, VR Mindfulness
- *07/2015 – 11/2020:* PhD Supervision, Jason Kennedy, Acting and its Double, http://hdl.handle.net/10292/13943
- *11/2018 – 03/2020:* PhD Advisor, David E. Bailey, Synchronous Reality: Place and Memory in Virtual Installation, http://hdl.handle.net/10292/13185
- *05/2016 – 10/2019:* PhD Co-Supervision, Jan Kruse, Computational Generators and Evaluators for Video Game Level Design using Cognitive Player Models, http://hdl.handle.net/10292/12944
- *04/2014 – 08/2016:* PhD Co-Supervision, Metuanooroa Tapuni, Ata: a practice-led inquiry into the intersection of virtual and physical environments, http://hdl.handle.net/10292/10096
- *11/2013 – 12/2016:* PhD Co-Supervision, Amit Gupta, Emotionally Intelligent Knitted Textiles: Emotional sensing and responsive action

Master

- Since 9/2023: MArch (Prof), Devarsh Patel, Cultural Heritage Scanning
- *02/2023 – 02/2024:* March (Prof), Shehryar Memon, Investigating future spaces for hauora (health) in Tāmaki Makaurau
- *07/2019 – 10/2023:* MCT, Li Goan Ko, The Virtual Choga: Hybrid 3D Acquisition of Large-Scale Cultural Heritage Objects Using Mobile Phone Scanning and PC-Based Photogrammetry, http://hdl.handle.net/10292/16862
- *07/2022 – 07/2023:* MCT, Haowei Wang, Some Key Aspects Do Make VR Games More Immersive than Traditional Video Games, http://hdl.handle.net/10292/16845
- *07/2021 – 03/2023:* MCT, Lee Jackson, Hyperrealism – The Influence of Changing Technologies on Architectural Rendering, http://hdl.handle.net/10292/16867

- *07/2021 – 03/2023:* MCT, Prapul Rajamahendravarapu, Immersive Application to Promote Physical Fitness
- *06/2020 – 03/2022:* MCT, Hooryah Asif, Virtual Dreams: A Study of Atmospheres for Long Term Healthcare Spaces Future Design, https://hdl.handle.net/10292/14991
- *06/2020 – 07/2021:* MCT, Ranju Raveendran, Personal Augmented Reality Interior Design Assistant (PARIDA), https://hdl.handle.net/10292/14701
- *06/2017 – 10/2019:* MCT, Raj Thandu, An Exploration of Virtual Reality Technologies for Museums, http://handle.net/10292/12937
- *07/2016 – 12/2017:* MCT, Marco Mueller, Sweetening Awareness: A Playful Interaction with Sugars in Food for Children, http://hdl.handle.net/10292/11569
- *12/2016 – 11/2017*: MCT, Yemon Lee, Evaluation of Data Visualisation Technologies for Air Traffic Control, http://hdl.handle.net/10292/11477
- *01/2016 – 06/2017:* MCT, Alejandro Davila, Virtual Reality Storytelling, http://hdl.handle.net/10292/10984
- *04/2014 – 06/2017:* MPhil, Steffan Hooper, Automated testing and validation of computer graphics implementations for cross-platform game development, http://hdl.handle.net/10292/11017
- *06/2015 – 06/2016:* MCT, Jacques Foottit, Touchable: Adapting a Haptic Feedback Glove for Use in Rehabilitation Contexts, http://hdl.handle.net/10292/10057
- *07/2014 – 07/2015:* MCT (co-supervisor), Hengbo Edison Wang, Creating Emotionally Engaging Non-Linear Narrative Experiences in Videogames, http://hdl.handle.net/10292/9137
- *06/2014 – 06/2015:* MCT (co-supervisor), Donald Smith, Avatar Mirrors, http://hdl.handle.net/10292/9047
- *05/2013 – 04/2014:* MCT (co-supervisor), Rudy Ceccato, The Spaces In Between, http://hdl.handle.net/10292/7794
- *03/2013 – 11/2013:* MA&D (co-supervisor), Jian Chen, CrazyCatch, http://hdl.handle.net/10292/7179

Honours

- *06/2019 – 12/2019:* BCT (Honours) Supervision, Support for dyslexic students at AUT
- *02/2014 – 06/2014:* External Honours Co-Supervision for a student at The University of Auckland, Development and Evaluation of an Exercycle Game Using Immersive Technologies

Examinations

- *08/2024:* MSc, D.J. He, Exercising Choice: Investigating the Impact of a Branching Narrative on Player Behaviour and Performance in Virtual Reality Exergames, The University of Auckland
- *07/2024:* MHIT, Y. Feng, Stress reduction therapy in immersive Environments: Does rotation mode have an effect on mental stress, HITLab NZ, University of Canterbury
- *03/2024:* MHIT, Y. Zhao, Daddy Long Legs: A Scale and Speed Up Virtual Reality Locomotion Technique for Medium-Scale Scenarios, HITLab NZ, University of Canterbury

- *10/2023:* MArt, P. Divers, Animation Production Pipelines: Exploring Alchemy's Development Through Case Study Analysis, Deakin University
- *03/2023:* MEng, H. Stefan, Evaluating the Effectiveness of Immersive Virtual Reality for Industrial Health and Safety Training, Deakin University
- *08/2022:* MDes, B. Walker, An Exploration Into Systemic Design Within a Virtual Game Ecosystem to Elicit Ecological Consciousness, Auckland University of Technology
- *06/2022:* Master, G. Ross, Extended Reality (XR) Flight Simulators as an Adjunct to Traditional Flight Training Methods, Massey University
- *04/2022:* Master, D. Page, Identifying Strategies to Mitigate Cybersickness in Virtual Reality Induced by Flying With an Interactive Travel Interface, University of Canterbury
- *11/2020:* Master, J. Stanton, Ambedic Actions: Definition and Taxonomy of a New Game Mechanics Category, Auckland University of Technology
- *06/2020:* PhD, Z. Feng, Towards a Customizable Immersive Virtual Reality Serious Game for Indoor Earthquake Emergency Training, The University of Auckland
- *04/2020:* Master, A. Gopalakrishnan, Assessing the use of Immersive Environments for Preparing Teachers to Address Challenging Student Behaviors, University of Canterbury
- *01/2020:* Master, C. Smith, Accelerating Infrastructure Development by Automating Aspects of the BIM Visualisation Stages & Improving Stakeholder Engagement During Engineering Design, Auckland University of Technology
- *11/2019:* Master, E. Collis, The Narrative Potential of Videogames: How Designing Mechanics Impacts Storytelling, Auckland University of Technology
- *09/2019:* Master, N. McHugh, Measuring and Minimizing Cybersickness in Virtual Reality, University of Canterbury
- *03/2018:* Master, P. Sasikumar, Haptic Contact in Immersive 360° Cinematic Environment, University of Canterbury
- *11/2017:* 4x Bachelor of Art and Design (Honours), Auckland University of Technology
- *02/2017:* Bachelor of Science (Honours), S. Martino, Visualising dark matter density in virtual reality with the Oculus Rift DK2, The University of Auckland
- *11/2016:* Master, N. Wellwood, Groove Studio: Exploring Action Observation Therapy in Virtual Worlds, Victoria University
- *08/2016:* Master, T.J. Greig, Evaluating the perceived immersion of procedurally generated game levels, Auckland University of Technology
- *11/2015:* Master, S. Dusterwald, Procedural Generation of Voxel Worlds with Castles, University of Waikato
- *10/2015:* PhD, D. Altimira, Designing engaging non-parallel exertion games through game balancing, University of Canterbury
- *02/2015:* Master, J. Kruse, Interactive Evolutionary Computation in design applications, Auckland University of Technology
- *09/2014:* Master, J. Butterworth, Aural Disjunction, Auckland University of Technology
- *06/2014:* Honours Dissertation, J. White, Physically based real-time water simulation on mobile devices, Auckland University of Technology

- *07/2013:* Honours Dissertation, W. Cen, MMO Game Server and Technologies, Auckland University of Technology
- *12/2012:* Honours Dissertation, H. Black, GPU based facial feature detection on a mobile device, Auckland University of Technology
- *11/2011:* Honours Dissertation, H.Y. Chin, Performance Bottlenecks of Using Game Engines on Mobile Phones, Auckland University of Technology
- *04/2011:* Honours Dissertation, R. Vallabh, Real-Time Computer Vision on a Mobile Device using Programmable Shaders, Auckland University of Technology

Reviews

- International Conference on Neural Information Processing (ICONIP) (2024:3)
- Intelligent Buildings International (2024:1)
- Frontiers in Virtual Reality (2024: 2, 2023: 6, 2022: 1, 2021:1)
- Journal of Virtual Reality, Springer (2023: 3, 2022: 2, 2021: 2, 2020: 1, 2019: 3)
- Journal of Concurrency and Computation: Practice and Experience (2020: 1)
- Journal of Virtual Reality and Broadcasting (JVRB), Germany (2016: 1, 2012: 1)
- Journal of Smart Cities, MDPI (2023: 1)
- Journal of Multimodal Technologies and Interaction, MDPI (2023: 2, 2021: 1)
- Smart and Sustainable Built Environments, Emerald Publishing (2022: 3, 2021: 1)
- SIGGRAPH Asia (2024: 5, 2023: 5, 2018: 1)
- Australasian Computer Science Week (ACSW) (2016: 3)
- Australasian User Interface Conference (AUIC) (2015: 2, 2014: 8, 2013: 6)
- International Conference on Remote Engineering and Virtual Instrumentation (2018: 1)
- Interactive Entertainment (IE) (2014: 2)
- Diagrams (2012: 1)
- Image Vision and Computing Conference New Zealand (IVCNZ) (2011: 2)
- New Zealand Computer Science Research Student Conference (NZCSRSC) 2008 to 2010 (2010: 3, 2009: 3, 2008: 3)

Professional Activities

- *Since 2021:* External Reviewer for Callaghan Innovation, Area of expertise: XR
- *Since 2020:* Academic Integrity Officer (Architecture/Creative Technologies)
- *2015:* PC Member for the Australasian Computer Science Week (ACSW) 2016
- *2015:* PC Member for the 13th International Conference on Neuro-Computing and Evolving Intelligence (NCEI) 2015
- *27/11/2014:* Panelist at the AUT Motion Capture Symposium 2014
- *07/10/2014:* Panelist at the CITRENZ Doctoral and Postgraduate Symposium 2014
- *2014:* PC Member for Interactive Entertainment (IE) 2014
- *2014:* Chair of the Australasian User Interface Conference (AUIC) 2015
- *Since 2013:* Leader of the Data Visualisation and Exploration research team within the Motion Capture Laboratory at AUT University.
- *2013:* Co-Chair and Webmaster of the Australasian User Interface Conference (AUIC) 2014
- *2011 – 2014:* Member of the Auckland University of Technology HCI Research group and the *JetBlack* landspeed record vehicle project research team.
- *2007 – 2011:* Member of the Graphics Group of The University of Auckland
- *2012:* Member of the program committee and webmaster for the Australasian User Interface Conference (AUIC) 2013

Professional Memberships

- *2016:* Member of the ACM

Personal Development

- *2018-2019:* Mentor for applying Fellows and Associate Fellows of the Higher Education Academy (HEA)
- *2017:* Fellow of the Higher Education Academy (HEA)
- *2014:* Certificate of Tertiary Teaching, Auckland University of Technology, Auckland, New Zealand
- *2014:* Participation in the AUT pilot for the Peer-Assisted Tutoring Scheme (PATS)
- *Since 2013:* Auckland University of Technology Postgraduate Centre Supervision Seminars:
  - *14/11/2019:* Focus on Writing: Using concept maps to organise ideas and structure research writing
  - *13/11/2019:* Financially Supporting Postgraduate Research via Scholarships
  - *09/05/2019:* Supervision Forum - Enrich Your Supervision Strategies
  - *31/10/2017:* Practice Led Research
  - *24/08/2017:* Maximising the Impact of Postgrad Research
  - *23/02/2016:* Developing Research proposals for Masters & Doctoral Students
  - *15/10/2015:* Examining a Doctoral Thesis
  - *11/09/2014:* Supervising ESL Students
  - *07/11/2013:* Developing Research Proposals
  - *26/09/2013:* Providing Feedback on Student Drafts
  - *25/09/2013:* Introduction to Ethics
  - *15/08/2013:* Quality Supervision & The Supervision Agreement
  - *08/08/2013:* Examining a Thesis
  - *27/07/2013:* Postgraduate Supervision at AUT: Policies and Procedures
  - *13/06/2013:* Solving Supervision Challenges

Personal Information

- *Since 12/2015:* NZ Citizen
- *Since 02/2010:* NZ Resident
- *Interests:* Photography, Ornithology, Tramping