
PUBLICATIONS & PATENTS

PATENTS

- . Zelenin, A., Kelly, B., Nagendran, A., **Control System for Virtual Characters**, Feb 13, 2020. **US 10,489,957**
- . Nagendran, A., Kelly, B. **Control Interface for Robotic Humanoid Avatar System and Related Methods**, June 5 2018. **US 9,987,749**
- . Welch, G., Nagendran, A., Hochreiter, J., Gonzalez, L., and Foroosh, H. **System for detecting sterile field events and related methods**, Nov. 7 2017. **US Patent 9,808,549.**
- . Welch, G., Aroian, K., Talbert, S., Allred, K., Weinstein, P., Nagendran, A., and Pillat, R. **Physical-virtual patient bed system**, June 13 2017. **US Patent 9,679,500.**
- . Hughes, C. E., Dieker, L. A., Nagendran, A., and Hynes, M. C. **Semi-automated digital puppetry control**, July 5 2016. **US Patent 9,381,426.**

PUBLICATIONS

- . Nagendran, A., Crowther, W., Turner, M., Lanzon, A., and Richardson, R. **Design, control, and performance of the weed6 wheel robot in the uk mod grand challenge**. *Advanced Robotics* 28, 4 (2014), 203–218.
 - . Nagendran, A., Pillat, R., Hughes, C., and Welch, G. **Continuum of virtual-human space: towards improved interaction strategies for physical-virtual avatars**. In *Proceedings of the 11th ACM SIGGRAPH International Conference on Virtual-Reality Continuum and its Applications in Industry* (2012), ACM, pp. 135–142.
 - . Nagendran, A., Pillat, R., Kavanaugh, A., Welch, G., and Hughes, C. **Amities: avatar-mediated interactive training and individualized experience system**. In *Proceedings of the 19th ACM Symposium on Virtual Reality Software and Technology* (2013), ACM, pp. 143–152.
 - . Nagendran, A., Pillat, R., Kavanaugh, A., Welch, G., and Hughes, C. **A unified framework for individualized avatar-based interactions**. *Presence: Teleoperators and Virtual Environments* 23, 2 (2014), 109–132.
 - . Nagendran, A., Pillat, R., and Richardson, R. C. **Robotic pre-manipulation-real-time polynomial trajectory control for dynamic object interception with minimum jerk**. In *ICINCO* (1) (2013), pp. 417–426.
 - . Nagendran, A., Richardson, R. C., and Crowther, W. J. **Bell shaped impedance control to minimize jerk while capturing delicate moving objects**. In *ICINCO-RA* (2) (2007), pp. 504–511.
 - . Nagendran, A., Scott, R. G., and Richardson, R. C. **The use of an inertial measurement unit to assist in dynamic stability during mobile robot exploration**. *SSRR* (2006)
-

-
- . Nagendran, A., and Shah, M. **Defense & security target tracking outside the visible spectrum**. SPIE Newsroom
 - . Nagendran, A., Steed, A., Kelly, B., and Pan, Y. **Symmetric telepresence using robotic humanoid surrogates**. Computer Animation and Virtual Worlds 26, 3-4 (2015), 271–280.
 - . Nagendran, A., Welch, G., Hughes, C., and Pillat, R. **Technical report: exploring human surrogate characteristics**. In Virtual Realities. Springer, Cham, 2015, pp. 215–228.
 - . Nagendran, A. **Capture dynamics for perched landing of small scale UAVs**. PhD thesis, The University of Manchester, 2010.
 - . Nagendran, A., Crowther, W., and Richardson, R. **Biologically inspired legs for UAV perched landing**. IEEE Aerospace and Electronic Systems Magazine 27, 2 (2012), 4–13.
 - . Nagendran, A., Crowther, W., and Richardson, R. **Dynamic capture of free-moving objects**. Proceedings of the Institution of Mechanical Engineers, Part I: Journal of Systems and Control Engineering 225, 8 (2011), 1054–1067.
 - . Devereux, D., Richardson, R., Nagendran, A., and Nutter, P. **Biologically inspired perimeter detection for whole-arm grasping**. ISRN Robotics 2013 (2013).
 - . Hochreiter, J., Daher, S., Nagendran, A., Gonzalez, L., and Welch, G. **Touch sensing on non-parametric rear-projection surfaces: A physical-virtual head for hands-on healthcare training**. In Virtual Reality (VR), 2015 IEEE (2015), IEEE, pp. 69–74.
 - . Hochreiter, J., Daher, S., Nagendran, A., Gonzalez, L., and Welch, G. **Optical touch sensing on nonparametric rear-projection surfaces for interactive physical-virtual experiences**. PRESENCE: Teleoperators and Virtual Environments 25, 1 (2016), 33–46.
 - . Hughes, C. E., Nagendran, A., Dieker, L. A., Hynes, M. C., and Welch, G. F. **Applications of avatar mediated interaction to teaching, training, job skills and wellness**. In Virtual Realities. Springer, Cham, 2015, pp. 133–146.
 - . Johnson-Glenberg, M., Lindgren, R., Koziupa, T., Bolling, A., Nagendran, A., Birchfield, D., and Cruse, J. **Serious games in embodied mixed reality learning environments**. In Proceedings of the Games, Learning and Society Conference (2012), vol. 8, p. 8.
 - . Kim, K., Nagendran, A., Bailenson, J., and Welch, G. **Expectancy violations related to a virtual humans joint gaze behavior in real-virtual human interactions**. In 28th Annual Conference on Computer Animation and Social Agents (2015).
 - . Kim, K., Nagendran, A., Bailenson, J. N., Raij, A., Bruder, G., Lee, M., Schubert, R., Yan, X., and Welch, G. F. **A large-scale study of surrogate physicality and gesturing on human-surrogate interactions in a public space**. Frontiers in Robotics and AI 4 (2017), 32.
 - . Nagendran, A., Harper, D., and Shah, M. **New system performs persistent wide-area aerial surveillance**. SPIE Newsroom 5 (2010), 20–28.
-

- . Pillat, R., Nagendran, A., and Lindgren, R. ***A mixed reality system for teaching stem content using embodied learning and whole-body metaphors.*** In Proceedings of the 11th ACM SIGGRAPH International Conference on Virtual-Reality Continuum and its Applications in Industry (2012), ACM, pp. 295–302.
 - . Pillat, R., and Nagendran, A. ***Compliance estimation during bilateral teleoperation of a robotic arm.*** In Robotics and Biomimetics (ROBIO), 2012 IEEE International Conference on (2012), IEEE, pp. 1591–1597.
 - . Pillat, R., Nagendran, A., and Hughes, C. E. ***A control paradigm for decoupled operation of mobile robots in remote environments.*** In GRAPP/IVAPP (2012), pp. 553–561.
 - . Pillat, R., Nagendran, A., and Lindgren, R. ***Design requirements for using embodied learning and whole-body metaphors in a mixed reality simulation game.*** In Mixed and Augmented Reality (ISMAR-AMH), 2012 IEEE International Symposium on (2012), IEEE, pp. 105–106.
 - . Rajan, V. A. K. T., Nagendran, A., Dehghani-Sanij, A., and Richardson, R. C. ***Tether monitoring for entanglement detection, disentanglement and localisation of autonomous robots.*** Robotica 34, 3 (2016), 527–548.
 - . Richardson, R., Whitehead, S., Ng, T., Hawass, Z., Pickering, A., Rhodes, S., Grieve, R., Hildred, A., Nagendran, A., Liu, J., et al. ***The djedi robot exploration of the southern shaft of the queen's chamber in the great pyramid of giza, egypt.*** Journal of Field Robotics 30, 3 (2013), 323–348.
 - . Richardson, R. C., Nagendran, A., and Scott, R. ***The sweep-extend mechanism: A 10-bar mechanism to perform biologically inspired burrowing motions.*** Mechatronics 21, 6 (2011), 939–950.
 - . Richardson, R. C., Nagendran, A., and Scott, R. G. ***Experimental tests of bidi-bot: A mechanism designed for clearing loose debris from the path of mobile search and rescue robots.*** Advanced Robotics 26, 15 (2012), 1799–1823.
 - . Schubert, R., Welch, G., Lincoln, P., Nagendran, A., Pillat, R., and Fuchs, H. ***Advances in shader lamps avatars for telepresence.*** In 3DTV-Conference: The True Vision- Capture, Transmission and Display of 3D Video (3DTV-CON), 2012 (2012), IEEE, pp. 1–4.
 - . Vasquez III, E., Nagendran, A., Welch, G. F., Marino, M. T., Hughes, D. E., and Koch, A. ***Virtual learning environments for students with disabilities.*** Rural Special Education Quarterly 34, 3 (2015).
 - . Vasquez III, E., Straub, C., Nagendran, A., Marino, M. T., Welch, G., Hughes, C., Russell, M., Koch, A., Delisio, L., Alias, A., et al. ***A comparison of virtual learning environments on the social responses for children with autism.*** Proceedings from Ludic Convergence (2014), 34.
 - . Abich, J., Reinerman-Jones, L. E., Matthews, G., Welch, G. F., Lackey, S. J., Hughes, C. E., and Nagendran, A. ***Good enough yet? A preliminary evaluation of human-surrogate interaction.*** In International Conference on Virtual, Augmented and Mixed Reality (2014), Springer, pp. 239–250.
-

