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Timothy Richard Coles

Overview	An enthusiastic, hardworking final year PhD student specialising in medical simulation with augmented reality and haptics technologies. Working with two academic institutions plus medical partners.
University Education	<p>Istituto Italiano di Tecnologia, Genova and Bangor University, Wales 2008 – 2010</p> <p>PhD in Medical Simulation</p> <p>A collaborative PhD position focusing on the simulation of IR radiology. Currently interests are the haptic (force and tactile feedback) simulation of palpation for a femoral pulse and combined needle insertion to be used in a training situation. Advocating augmented reality for co-location of haptics and visual feedback. Managing close cooperation between both Bangor and Genova academic institutes and medical partners of the CRAVIE consortium UK.</p> <p>University of Wales, Bangor 2006 – 2007</p> <p>MSc in Advanced Visualisation, Virtual Environments and Computer Animation: Pass with Distinction</p> <p>A degree specialising in advanced computer graphics principles and practice.</p> <p>Modules include: <i>Java programming, computer animation, computing shape, virtual environments and human perception, sample based geometric modelling, artificial intelligence and agents.</i></p> <p>Thesis: <i>A comparison of a needle puncture fidelity between commercially available haptic devices</i></p> <p>University of Wales, Bangor 2003 – 2006</p> <p>BSc Computer Science: First class honours</p> <p>Modules included: <i>OO Java programming, algorithm design, pattern recognition and neural networking, knowledge engineering and data mining, business process re-engineering, database systems, software engineering and formal methods, graphics and animation and operating systems and concurrency.</i></p> <p>Dissertation: <i>Analysis of the RIP and OSPF routing protocols using an OPNET model of the JANET network</i></p>
Publications and Presentations	<p>Journal Publications</p> <ul style="list-style-type: none"> ▪ T.R Coles, D.A. Gould, N.W. John and D.G. Caldwell, “Integrating Haptics with Augmented Reality in a Femoral Palpation and Needle Insertion Training Simulation”, <i>IEEE Transactions on Haptics. In submission.</i> ▪ T.R. Coles, D Meglan and N.W. John, “The Role of Haptics in Medical Training Simulators: A Survey of the State-of-the-art”, <i>IEEE Transactions on Haptics. Available Online in Advance of Print.</i> <p>Conference Publications</p> <ul style="list-style-type: none"> ▪ T.R Coles, D.A. Gould, N.W. John and D.G. Caldwell, “Virtual Femoral Palpation Simulation for Interventional Radiology Training” <i>EG UK Theory and Practice of Computer Graphics, 2010.</i> ▪ F. Bello, T.R. Coles, D.A. Gould, C.J. Hughes, N.W. John, F.P. Vidal, S. Watt, “The Need to Touch Medical Virtual Environments?” <i>Workshop of Medical Virtual Environments at IEEEVR2010.</i> ▪ T.R. Coles, N.W. John, “The Case for Augmented Reality when Training in a Virtual Medical Environment” <i>Workshop of Medical Virtual Environments at IEEEVR2010.</i> ▪ T.R. Coles, N. W. John, “The Effectiveness of Commercial Haptic Devices for Use in Virtual Needle Insertion Training Simulations,” <i>Advances in Computer-Human Interaction, 2010, Third International Conference on, 2010.</i> ▪ T.R. Coles, N.W. John, D.A. Gould, D.G. Caldwell, “Haptic Palpation for the Femoral Pulse in Virtual Interventional Radiology” <i>Advances in Computer-Human Interaction, 2009, Second International Conference on, 2009.</i> <p>Poster Presentations</p> <ul style="list-style-type: none"> ▪ T.R Coles, G. Sofia, N.W. John, D.A. Gould and D.G Caldwell, “Modification of Commercial Force Feedback Hardware for Needle Insertion Simulation” <i>Stud Health Technol Inform, 2010. Accepted</i> <p>Invited Presentations</p> <ul style="list-style-type: none"> ▪ ACHI2010, St Martin, Antilles. Panel of Experts: Chair: Prof. B.A. Radig. “Digital Society Trends: New Forms of Machine-Human Interactions.” ▪ Craive, Manchester. November 2008. “Haptic Simulation of Palpation”

