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## Vortex Academic Partner Papers

### Virtual Reality Environments

*Neuromechanical Analysis of Locust Jumping*, David Wayne Cofer, Georgia State University  
[http://etd.gsu.edu/theses/available/etd-04162009-144257/unrestricted/Cofer\\_David\\_200905\\_phd.pdf](http://etd.gsu.edu/theses/available/etd-04162009-144257/unrestricted/Cofer_David_200905_phd.pdf)

*AnimatLab: A 3D graphics environment for neuromechanical simulations*, Cofer D, Cymbalyuk G, Reid J, Zhu Y, Heitler WJ, Edwards DH., Georgia State University  
<http://www.ncbi.nlm.nih.gov/pubmed/20074588>

*Soil Deformation Models for Real-Time Simulation: A Hybrid Approach*, Daniel Holz, Thomas Beer, Torsten Kuhlen, Virtual Reality Group, RWTH Aachen University  
[http://www1.rz.rwth-aachen.de/vr/research/publications/publications\\_e.php](http://www1.rz.rwth-aachen.de/vr/research/publications/publications_e.php)

*Quadruped virtual robot simulation in a virtual environment obeying physical laws*, Kouki Miyoshi, Norihiro Abe, Yoshihiro Tabuchi, Kyusyu Institute of Technology, Hirokazu Taki, Wakayama University, and Shoujie He, VuCOMP  
<http://www.springerlink.com/content/k9181403923w04q8/>

*Visual simulation for granular rocks crush in virtual environment based on fractal geometry*, Dianliang Wu, Yong Hu, Xiumin Fan, CIM Institute, School of Mechanical Engineering, Shanghai Jiao Tong University  
[http://www.sciencedirect.com/science?\\_ob=MIimg&\\_imagekey=B6X3C-4W7BOGV-2-R&\\_cdi=7295&\\_user=10&\\_orig=search&\\_coverDate=08%2F31%2F2009&\\_sk=999829992&view=c&wchp=dGLbVzb-zSkzV&md5=51ab85243276978e95242989f13a8308&ie=/sdarticle.pdf](http://www.sciencedirect.com/science?_ob=MIimg&_imagekey=B6X3C-4W7BOGV-2-R&_cdi=7295&_user=10&_orig=search&_coverDate=08%2F31%2F2009&_sk=999829992&view=c&wchp=dGLbVzb-zSkzV&md5=51ab85243276978e95242989f13a8308&ie=/sdarticle.pdf)

*Synthesizing Sounds from Rigid-Body Simulations*, James F. O'Brien, Chen Shen, Christine M. Gatchalian, EECS, Computer Science Division, University of California, Berkeley  
<http://www.cs.berkeley.edu/b-cam/Papers/obrien-2002-SSR.pdf>

### Humanoid robots

*Rapid Development System for Humanoid Vision-based Behaviors with Real-Virtual Common Interface*, Kei Okada, Yasuyuki Kino, Yasuo Kuniyoshi, Masayuki Inaba, Hirochika Inoue, Department of Mechano-Informatics, The University of Tokyo, Fumio Kanehiro, National Institute of Advanced Industrial Science and Technology, METI  
[http://www.jsk.t.u-tokyo.ac.jp/~k-okada/paper/2002\\_iros\\_okada\\_fast.pdf](http://www.jsk.t.u-tokyo.ac.jp/~k-okada/paper/2002_iros_okada_fast.pdf)

*Dynamic Control and Simulation of Human Musculo-Skeletal Model*, K. Tahara, Z. W. Luo, T. Odashima, M. Onishi, Bio-Mimetic Control Research Center, RIKEN, S. Hosoe, Dept. of Electronic-Mechanical Eng., Nagoya University, A. Kato, Department of Electronics, Aichi Institute of Technology  
<http://onishi-lab.jp/riken/pdf/SICE2004.pdf>

*Modeling and Dynamic Simulation of Super-redundant Musculo-skeletal System*, K. Tahara, Z. W. Luo, T. Odashima, M. Onishi, F. Asano, Bio-Mimetic Control Research Center, RIKEN, A. Kato, Department of Electronics, Aichi Institute of Technology  
<http://onishi-lab.jp/riken/pdf/CSIMTA2004.pdf>



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*Development of a Dynamic Human Movement Analysis Platform*, K. Tahara, T. Odashima, M. Onishi, F. Asano, Z. W. Luo, S. Hosoe, Bio-Mimetic Control Research Center, RIKEN  
[http://onishi-lab.jp/riken/pdf/2cam\\_tahara.pdf](http://onishi-lab.jp/riken/pdf/2cam_tahara.pdf)

*Integration of PC-based 3D Immersion Technology for Bio-mimetic Study of Human Interactive Robotics*, Z. W. Luo, M. Onishi, T. Odashima, K. Oyama, F. Asano, S. Hosoe, Bio-Mimetic Control Research Center, RIKEN  
<http://onishi-lab.jp/riken/pdf/CU154.pdf>

*An equilibrium point based humanoids control model*, Xue Gu, Dana Ballard, Computer Science Department, University of Rochester  
<http://portal.acm.org/citation.cfm?id=1237332>

### Evolutionary Robots

*Bias-Optimal Incremental Learning of Control Sequences for Virtual Robots*, Jurgen Schmidhuber, Viktor Zhumatiy, Matteo Gagliolo, IDSIA  
<ftp://ftp.idsia.ch/pub/juergen/snakeias.pdf>

*The Role of Social and Cognitive Factors in the Emergence of Communication: Experiments in Evolutionary Robotics*, Davide Marocco, University of Calabria, Centro Interdipartimentale della Comunicazione, Angelo Cangelosi, University of Plymouth, Institute of Neuroscience and School of Computing, Stefano Nolfi, National Research Council, Institute of Cognitive Science and Technologies  
<http://laral.istc.cnr.it/nolfi/papers/marocco.emer-lang.pdf>

*Towards group transport by swarms of robots*, Roderich Groß, Laboratoire de Systèmes de Robotiques, Ecole Polytechnique Fédérale de Lausanne, Marco Dorigo IRIDIA, CoDE, Université Libre de Bruxelles  
<http://code.ulb.ac.be/dbfiles/GroDor2009jibic.pdf>

*Swarm-Bot: a New Distributed Robotic Concept*, Francesco Mondada, Andre Guignard, Dario Floreano Autonomous Systems Lab (LSA), EPFL, Giovanni Pettinaro, Ivo Kwee, Luca Maria Gambardella, Istituto Dalle Molle di Studi sull'Intelligenza Artificiale (IDSIA), USI/SUPSI, Jean-Louis Deneubourg, Center for Nonlinear Phenomena and Complex Systems (CENOLI) - Université Libre de Bruxelles, Stefano Nolfi, Institute of Cognitive Sciences and Technologies - CNR, Marco Dorigo Institut de Recherches Interdisciplinaires et de Développement en Intelligence Artificielle (IRIDIA) - Université Libre de Bruxelles  
<http://www.idsia.ch/~luca/swarmlbot-hardware.pdf>

*Evolving Self-Organizing Behaviors for a Swarm-bot*, Marco Dorigo, Roderich Groß, Thomas H. Labella, IRIDIA, Université Libre de Bruxelles, Erol Şahin, KOVAN - Department of Computer Engineering, Middle East Technical University, Gianluca Baldassarre, Stefano Nolfi, Institute of Cognitive Sciences and Technologies - CNR, Jean-Louis Deneubourg, CENOLI - Université Libre de Bruxelles, Francesco Mondada, Dario Floreano, ASL - Swiss Federal Institute of Technology, Luca M. Gambardella, IDSIA, Manno-Lugano  
<http://www.idsia.ch/~luca/swarmlbot-control.pdf>

*Evolving Modular Genetic Regulatory Networks*, Josh Bongard, Artificial Intelligence Laboratory, University of Zurich



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<http://www.cs.uvm.edu/~jbongard/papers/BongardWCCI2002.pdf>

## Robots

*Dynamics Performance Evaluation of Planetary Rover Concepts*, M. Hirschhorn, A. Azimi, B. Ghotbi, J. Kovacsics, J. Angeles, P. Radziszewski, Department of Mechanical Engineering and Centre for Intelligent Machines, McGill University, M. Teichmann, M. Courchesne, CMLabs Simulations, Inc.

*Contact Processing in the Simulation of Clawar*, Tamas Juhasz, Vadym Rusin, Ulrich Schmucker, Department Virtual Engineering, Fraunhofer Institute for Factory Operation and Automation. Mykhaylo Konyev, Institute for Electrical Energy Systems, University of Magdeburg  
<http://www.uni-magdeburg.de/ieat/robotslab/articles/2007/clawar2007.pdf>

*Neural Network Based Path Planning for A Multi-Robot System with Moving Obstacles*, Howard Li, Simon X. Yang and Yevgen Biletskiy, Department of Electrical & Computer Engineering, University of New Brunswick  
[http://ieeexplore.ieee.org/xpl/freeabs\\_all.jsp?arnumber=4626446](http://ieeexplore.ieee.org/xpl/freeabs_all.jsp?arnumber=4626446)

*Planning Behaviors of a Modular Robot: an Approach Applying a Randomized Planner to Coherent Structure*, Satoshi Murata, Interdisciplinary Graduate School of Science and Engineering, Tokyo Institute of Technology. Eiichi Yoshida, Haruhisa Kurokawa, Akiya Kamimura, Kohji Tomita, Shigeru Kokaji, Intelligent Systems Institute, National Institute of Advanced Industrial Science and Technology (AIST)  
<http://unit.aist.go.jp/is/frrg/dsysd/mtran3/papers/IROS2004yoshi.pdf>

*Shape-shifting Tracked Robotic Vehicle for complex terrain navigation*, Isabelle Vincent, Mike Trentini, Defence Research and Development Canada - Suffield  
<http://pubs.drdc.gc.ca/PDFS/unc70/p529182.pdf>

*Multi-Objectivity as a Tool for Constructing Hierarchical Complexity*, Jason Teo, Minh Ha Nguyen, and Hussein A. Abbass, Artificial Life and Adaptive Robotics (A.L.A.R.) Lab, School of Computer Science, University of New South Wales, Australian Defence Force Academy Campus  
<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.14.9747&rep=rep1&type=pdf>

## Grasping

*Evolving the Neural Controller for a Robotic Arm Able to Grasp Objects on the Basis of Tactile Sensors*, Raffaele Bianco, Stefano Nolfi, Institute of Cognitive Science and Technologies, National Research Council (CNR)  
<http://laral.istc.cnr.it/nolfi/papers/nolfi.grasp.pdf>

*Task-Oriented Quality Measures for Dexterous Grasping*, R. Haschke, J. J. Steil, I. Steuwer, and H. Ritter Bielefeld University, Neuroinformatics Group, Faculty of Technology  
<http://ni.www.techfak.uni-bielefeld.de/files/HaschkeSteilSteuwerRitter2005-TOQ.pdf>

*Experience-based and Tactile-driven Dynamic Grasp Control*, Jan Steffen, Robert Haschke and Helge Ritter Neuroinformatics Group, Faculty of Technology, University of Bielefeld



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*Situated robot learning for multi-modal instruction and imitation of grasping*, J. J. Steil, F. Rothling, R. Haschke and H. Ritter, Neuroinformatics Group, Faculty of Technology, University of Bielefeld  
<http://ni.www.techfak.uni-bielefeld.de/files/SteilRoethlingHaschkeRitter2004-SRL.pdf>  
Haptics

*Local model of interaction for haptic manipulation of rigid virtual worlds*, Daniela Constantinescu, Department of Mechanical Engineering, University of Victoria, Septimiu E. Salcudean, Elizabeth A. Croft, Robotics and Control Laboratory, University of British Columbia  
[http://www.me.uvic.ca/~danielac/constantinescu\\_ijrr05.pdf](http://www.me.uvic.ca/~danielac/constantinescu_ijrr05.pdf)

*Impulsive forces for haptic rendering of rigid contacts*, Daniela Constantinescu, Department of Mechanical Engineering, University of Victoria, Septimiu E. Salcudean, Elizabeth A. Croft, Robotics and Control Laboratory, University of British Columbia  
[http://www.ece.ubc.ca/~danielac/constantinescu\\_isr2004.pdf](http://www.ece.ubc.ca/~danielac/constantinescu_isr2004.pdf)



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