Curriculum Vitae

Name: JIAN CHANG
Academic Degrees: BSc; MSc; PhD
Position: Associate Professor
Address: National Centre for Computer Animation, Faculty of Media and Communication, Talbot Campus, Bournemouth University, Poole, BH12 5BB, UK
Telephone: +44 (0)1202 961881
Email: jchang@bournemouth.ac.uk
http://nccastaff.bournemouth.ac.uk/jchang/

Summary

I am an Associate Professor and an active scientist in computer animation with over 15 years' research experience in a world leading centre, the NCCA, the UK No.1 educational and research base for computer animation. My research has focused on physics based modelling (deformation & fluid), motion synthesis, virtual reality (surgery simulation), and novel HCI (eye tracking, gesture control and haptic). I am keen to exploit the usage of novel computer animation techniques for cross-disciplinary research and applications, which has led to international research collaboration and joint funding bids.

My research has been funded by various funding sources, including the Royal Society, EU FP7, and HEIF. I have taken project management and supervision roles in a number of prestigious EU funded research project, including FP7 MC-IIF project "AniM" – 623883 (PI) on *smart data management for computer animation* and FP7 MC-IRSES project "AniNex" – 612627 (chief scientist) on *next generation animation technologies* putting together efforts of 5 leading international research institutions. My research has contributed to another FP7 funded research cooperation, "Dr Inventor", – 611383 (€2.65M), which develops *data mining and artificial intelligence technologies to supplement human ingenuity*. My research has also contributed to the innovative development of "virtual surgery theatre" jointly with NHS surgeons and has led to novel "virtual lifeboat launching" jointly with RNLI to improve safety on sea, both of which have potential to create regional influence and cross-sectoral impact.

I have published 47 peer-reviewed papers (including high-impact SIGGRAPH ASIA & Computer Graphic Forum) and have been the programme committee member for over 20 International conferences.

Employment

Sep, 2014- Present, Associate Professor in Computer Animation, Bournemouth University
Jan, 2014– Aug, 2014 Senior Lecturer in Computer Animation, Bournemouth University
Sep, 2011 – Dec, 2013 Lecturer in Computer Animation, Bournemouth University
Oct 2007 – Aug, 2011 Research Lecture in Computer Animation, Bournemouth University
Aug 2006 – Oct, 2007 Post-doctoral Research Fellow in Computer Animation, Bournemouth University

Education

Mar, 2007	PhD	Computer Animation,	Bournemouth University
Jul,2001	MSc	Solid Mechanics,	Chongqing University, China
Jul, 1999	BSc	Engineering Mechanics,	Chongqing University, China
Oct, 2010	PG Cert	Education Practices,	Bournemouth University
Oct, 2007	PG Cert	Research Degree Supervision,	Bournemouth University

Research Grants Awarded

- Jan, 2016-Jan, 2019, BU, a fully funded PhD position, supervisor, £42k + fee waive
- Oct, 2015- Jul, 2016, HEIF, "Virtual Prototyping of New Lifeboat Launching", PI, £38k
- Jan, 2015-Dec,2017, National Natural Science Foundation of China, "Data Driven Train Crash Simulation", E050303, Co-PI, ¥270k
- Nov, 2014- Nov, 2016, EU FP7, "AniM", 623883, PI, €231k
- Aug, 2014-Jul, 2015, BU Fusion Investment Fund, Networking, PI, £2.5k
- Jan, 2014-Dec, 2016, EU FP7, "Dr. Inventor", 611383, Participant, €2,650k
- Dec, 2013- Nov, 2017, EU FP7, "AniNex", 612627, Chief Scientist, €432k
- Jan, 2013-Dec, 2015, National Natural Science Foundation of China, "Cervical Vertebra Modelling", 31200708, Co-PI, ¥320k
- Aug, 2012-Jul, 2013, BU Fusion Investment Fund, Networking, PI, £10k
- Oct, 2012- Sep, 2015, BU, a fully funded PhD position, supervisor, £42k + fee waive
- Aug, 2011-Jul, 2013, BU, EUADS, PI, £3k
- Apr, 2012- Oct, 2012, BU Research Development Fund – Small Grants Scheme, Co-PI, £2k
- Apr, 2010- Apr, 2012, HEIF, "Virtual operating theatre", Co-PI, £82k
- Nov,2009- Dec, 2009, Royal Society, Travel Grant, PI, £1.1k

Publications

[1] Liang, H., Chang, J., Deng, S., Chen, C., Tong, R., Zhang, J.J., (2015) Exploitation of novel multiplayer gesture-based interaction and virtual puppetry for digital storytelling to develop children's narrative skills, 14th ACM SIGGRAPH International Conference on Virtual Reality Continuum and Its Applications in Industry, Kobe, Japan

[2] Liang, H., Chang, J., Kazmi, I., Zhang, J.J., (2015) Puppet Narrator: utilizing motion sensing technology in storytelling for young children, Seventh International Conference on Virtual Worlds and Games for Serious Applications: VS‐Games 2015, in Skövde, Sweden

[3] Yang, T., Ren, B., Chang, J., Hu, S. Lin, M.C., Zhang, J.J., (2015) Fast Multiple-fluid Simulation Using Helmholtz Free Energy, ACM Transactions on Graphics, SIGGRAPH Asia 2015,

[4] Zhang, W., Wang, M., Chang, J., Tong, R., and Zhang, J.J.,, (2015). Image-based hair pre-processing for art creation, a case study of bas-relief modeling., CGIV 2015, Barcelona, Spain

[5] Liang, H., Chang, J., Yang, X., You, L., Bian, S., & Zhang, J. J. (2015). Advanced ordinary differential equation based head modelling for Chinese marionette art preservation. Computer Animation and Virtual Worlds, 26(3-4), 207-216.

[6] Jin, Y., Qian, G. P., Zhao, J. Y., Chang, J., Tong, R. F., & Zhang, J. (2015). Stretch-Minimizing Volumetric Parameterization. Journal of Computer Science and Technology, 30(3), 553-564.

[7] Deng, S., Kirkby, J. A., Chang, J., & Zhang, J. J. (2014). Multimodality with Eye tracking and Haptics: A New Horizon for Serious Games?. International Journal of Serious Games, 1(4).

[8] Guo, S., Chang, J., Yang, X., Wang, W., & Zhang, J. (2014). Locomotion Skills for Insects with Sample‐based Controller. In Computer Graphics Forum (Vol. 33, No. 7, pp. 31-40).

[9] Guo, S., Southern, R., Chang, J., Greer, D., & Zhang, J. J. (2015). Adaptive motion synthesis for virtual characters: a survey. The Visual Computer, 31:497–512. DOI: 10.1007/s00371-014-0943-4

[10] Pan, J. J., Chang, J., Yang, X., Liang, H., Zhang, J. J., Qureshi, T., ... Hickish, T. (2014). Virtual reality training and assessment in laparoscopic rectum surgery. The International Journal of Medical Robotics and Computer Assisted Surgery. DOI: 10.1002/rcs.1582

[11] Guo, S., Chang, J., Cao, Y., & Zhang, J. (2014). A novel locomotion synthesis and optimisation framework for insects. Computers & Graphics, 38, 78-85.

[12] Wang, M., Guo, S., Zhang, H., He, D., Chang, J., & Zhang, J. J. (2013). Saliency-based relief generation. IETE Technical Review, 30(6), 454.

[13] Deng, S., Chang, J., Zhang, J.J., (2013) A Survey of Haptics in Serious Gaming, The Games and Learning Alliance conference (GALA 2013), 23-25 Oct, 2013, Paris

[14] Xiong, H., Li, Z., Chang, J., Wang, M., You, L., Zhang, J.J., (2013) Modelling dynamics of transmission conductors with Cosserat rod, Computer Assisted Methods in Engineering and Science.

[15] Guo, S., Chang, J., Tharib, S., Zhang, J. J., (2013), Biologically–inspired Motion Pattern Design of Multi–legged Creatures, 2nd International Conference on Evolutionary and Biologically Inspired Music, Sound, Art and Design (EvoMusart13), Vienna, Austria, 3-5 Apr, 2013, Lecture Notes in Computer Science, 7834, 145-156

[16] Jiao, P., Chang, J., Yang, X., Jiao, Y., Liu, F., Guo, S., Bai, R., Ouyang, J., Zhang, J.J., (2012), Registration for 3D model of human atlas based on vertex information, Journal of Medical Biomechanics,27(4), 186-190 (In Chinese)

[17] Guo, S., Chang, J., Tharib, S., Zhang, J.J., (2012), A biologically–inspired locomotion controller for multi-legged creatures, Eurographics/ ACM SIGGRAPH Symposium on Computer Animation, 2012, Swiss.

[18] Yang, X., Chang, J., Southern, R., Zhang, J.J., (2012), Automatic Cage Construction for Retargeted Muscle Fitting，The Visual Computer, 29(5), 369–380

[19] Yang, X., Chang, J., Southern, R., Zhang, J.J., (2012), Automatic muscle retargeting for character animation, Computer Graphics International 2012, June 2012, Bournemouth

[20] Kerber, J., Wang, M., Chang, J., Zhang, J.J., Belyaev, A., Seidel, H.P., (2012), Computer assisted relief generation - a survey, Computer Graphics Forum, 31(8), 2363-2377.

[21] Pan, J.J., Chang, J., Yang, X., Zhang, J.J., Qureshi T., Howell R., Hickish T., (2011), A Medical Virtual Reality Simulator in Laparoscopic Rectum Surgery, CyberTherapy and Rehabilitation, 4(4), pp.19-20

[22] Wang, M., Chang, J. Kerber J., Zhang, J.J, (2011). A framework for digital sunken relief generation based on 3D geometric models， The Visual Computer，28(11), 1127-1137 http://dx.doi.org/10.1007/s00371-011-0663-y

[23] Chang, J., Yang, X., Pan, J., Li, W., Zhang, J.J., (2011), A fast hybrid computation model for rectum deformation, The Visual Computer, 27(2), pp. 97-107

[24] Pan, J.J., Chang, J., Yang, X., Zhang, J.J., Qureshi T., Howell R., Hickish T., (2011), Graphic and haptic simulation system for virtual laparoscopic rectum surgery, International Journal of Medical Robotics and Computer Assisted Surgery. doi: 10.1002/rcs.399

[25] Wang, M., Kerber J., Chang, J. and Zhang, J.J, (2011). Relief stylization from 3D models using featured lines. *27th Spring conference on Computer Graphics*.

[26] You, L., Chang, J., Yang, X., Zhang, J.J., (2011), Solid modelling based on sixth order partial differential equations, Computer-Aided Design, 43(6), pp. 720-729, DOI: 10.1016/j.cad.2011.01.021.

[27] Chang, J., Yang, X., Pan, J., Li, W. and Zhang, J.J., (2010). Beads-on-string model for virtual rectum surgery simulation. In: 3D Anatomic Human Summer School 2010, 23-24 May 2010 , Chania, Crete, Greece.

[28] Wang, M., Chang, J. and Zhang, J.J., (2010). A review of digital relief generation techniques. In: The 2nd International Conference on Computer Engineering and Technology (ICCET 2010), 16 - 18 April 2010, Chengdu, Sichuan, China.

[29] Wang, M., Chang, J., Pan J. and Zhang, J.J, (2010). Image-based bas relief generation with gradient operation. *Proceedings of the 11th IASTED International Conference Computer Graphics and Imaging.*

[30] Wang, M., Lv H., Chang, J. and Zhang, J.J, (2010).Implementation of CUDA-based loop mesh subdivision. The 3rd International Conference on Computer and Electrical Engineering.

[31] Chang, J., Pan, J. and Zhang, J.J., (2009). Modelling rod-like flexible biological tissues for medical training, Lecture Notes in Computer Science: 5903, pp.51-61, Springer Berlin

[32] Chang, J., Yang, X. and Zhang, J. J., (2009). Continuous skeleton-driven skinning - a general approach for modelling skin deformation, International Journal of Image and Graphics, 9(4). pp. 591-608.

[33] Chang, J., Zhang, J.J. and Zia, R., (2009). Modelling deformations in car crash animation. The Visual Computer. 25(12). pp. 1063-1072

[34] Chang, J., Yang, X., Shepherd, D. and Zhang, J.J., (2009). Defoxel: a new tool for virtual aesthetic shaping. in: visualization, imaging, and image processing (VIIP 2009), 13-15 July 2009, Cambridge, U.K.

[35] Chang, J., Yang, X. and Zhang, J.J., (2009). Hyper-twist. Digital Creativity, 20 (1 & 2), pp. 47 - 58.

[36] Chang, J., Zhang, J.J. and Zia, R., (2009). Fast vehicle crash modelling for games. In: IEEE First International Conference Games and Virtual Worlds for Serious Applications, 23-24 March 2009, Technocentre Coventry University, UK., pp. 141-147.

[37] Yang, X., Chang, J. and Zhang, J.J., (2007). Animating human muscle structure. Computing In Science & Engineering, 9 (5), pp. 39-45.

[38] Chang, J., Shepherd, D. and Zhang, J.J., (2007). Cosserat-beam-based dynamic response modelling. Computer Animation and Virtual Worlds, 18(4-5), pp 429-436.

[39] Chang, J., Zhang, J.J. and You, L., (2006). Physically-based deformations: copy and paste. The Visual Computer, 23(1), pp. 71-82.

[40] Chang, J., Yang, X. and Zhang, J.J., (2005). Fast mesh-free deformations. In: Ninth International Conference on Computer Aided Design and Computer Graphics (CAD-CG'05), 7-10 December, 2005, Hong Kong, China.

[41] Chang, J. and Zhang, J. J., (2004). Force mapping. In: Theory and Practice of Computer Graphics, Proceedings (TPCG'04), 8-10 June 2004, Bournemouth University, Poole, pp. 204-210.

[42] Chang, J. and Zhang, J.J., (2004). Mesh-free deformations. Computer Animation and Virtual Worlds, 15 (3-4), pp. 211-218.

[43] Wang, J., Yang, Y., Peng, X. and Chang, J., (2002), A Non-local Analysis of Cyclic Plasticity of Dual-Phase Materials (I): Non-local Constitutive Model of Pearlitic Agglomeration. Conference of South China Computational Mechanics 2002(SCCM'02). (In Chinese)

[44] Wang, J., Yang, Y., Peng, X. and Chang, J., (2002), A Non-local Analysis of Cyclic Plasticity of Dual-Phase Materials (II): A Macro and Messo Level Analysis of Cyclic Plasticity of PD3 Pearlitic Steel. Conference of South China Computational Mechanics 2002(SCCM'02). (In Chinese)

[45] Peng, X. and Chang, J., (2001). A Microstructure-Based Analysis for Cyclic Plasticity of Dual-Phase Pearlitic Rail Steels. Acta Mechanica Solida Sinica, 14 (4), pp. 334-343.

[46] Chang, J., Yang, Y.M., Peng, X.H. and Huang, S.L., (2001). Research on a Magnetorheological Fluid Rheological Property Testing Device, Chinese Journal of Scientific Instrument, 22 (4), 354-357, 368. (In Chinese)

[47] Yu, H., Liu, Y., Chang, J. and Zhao, C., (2001). The Evaluation and Trouble Shooting of the Front Side Panel Forming