

Curriculum Vitæ

D r R i c h a r d J a m e s W a r e h a m

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W o r k E x p e r i e n c e

Scientific Consultant, PneumaCare Ltd

2008—2009

Invented and developed a novel form of passive thoracic monitoring using off-the-shelf components. Work involved the creation of a structured-light based system to track chest movements and reconstruct three dimensional chest wall movements.

Research Associate, University of Cambridge

2007—2008

Engaged in post doctoral research into novel animation and skinning techniques for computer models. Work sponsored by the DTI and Geomerics Ltd.

Senior Research and Development Engineer, Geomerics Ltd

2005—2007

Undertook research into cutting-edge computer graphics, building a significant package of novel techniques in lighting, animation and physics. Concieved and developed a real-time radiosity solution which has become core-IP for the company and generated significant press interest.

A c a d e m i c

Publications

A full list of publications is available online.

Lung Tidal Volume measured using Structured Light Plethysmography and Spirometry

2009

In preparation.

Bone Glow: An Improved Method for Assignment of Weights for Mesh Deformation

2008

In Proceedings of AMDO 2008, Spain .

Rigid Body Pose and Position Interpolation using Geometric Algebra

2008

In Proceedings of AMDO 2008, Spain .

The Method and Apparatus for Monitoring an Object

2008

Patent dealing with non-invasive monitoring of lung function via structured light. Application number GB 0822605.2.

The Method for Calculating Global Illumination via Sampling

2007

Patent application (application number pending).

University Education

PhD, Cambridge University Engineering Department

2002—2006

Researching into applications of conformal geometric algebra to computer graphics and mathematical teaching.

MEng, Robinson College, University of Cambridge

1998—2002

Graduated with honours and distinction from Electrical and Information Sciences Tripos. Also completed two years of the Natural Sciences Tripos.

Other Experience

Computing

Languages

Fluent: C/C++ (14 years), Perl (9 years), Objective C (3 years), C# (1 year), various BASIC dialects and ARM assembler (14 years). Familiar with: Java (8 years), Python (2 years).

Web technologies

8 years using a number of web technologies including lately XHTML, XML, CSS. Experience with JavaScript and DHTML.

APIs

OpenGL, DirectX, POSIX-style system interfaces, Win32 and standard .NET assemblies. CUDA and OpenCL APIs for accelerated stream computing on GPUs.

Community Software Development

Experience in collaborative software development and design methods with significant amounts of peer-reviewed code. Examples are scattered throughout a number of well-known projects. Significant contributions include:

Desktop Manager

2003—present

Original author and maintainer of a virtual desktop provider for Mac OS X. Ranked highly on many Mac software sites and popularity is such that interviews with me were published and syndicated on top-rated technical news sites.

libdvdnv

2002—present

Original author of DVD navigation and menu support in the Linux-based xine multimedia player. Almost all open-source applications offering DVD menu functionality utilise this library e.g. Totem, xine, GStreamer's DVD menu parser and XBox Media Centre.

xine

2001—present

Heavy contributor to xine multimedia player including internal event dispatcher synchronised with multimedia events and the DVD menu support. In addition I wrote XinePlayer, a native DVD and multimedia player application for OS X using the xine engine for playback and libdvdnv for DVD navigation

Other Interests and Awards

Puzzles

I am also a keen amateur puzzler. I was a winner of the first Internet-based PuzzleDonkey sequential puzzle challenge. Along with puzzling I enjoy recreational programming and mathematics.

Comedy

Founder member of ICE, the University of Cambridge's Improvised Comedy society. Activity includes teaching comedy to undergraduates, organising and performing at student and corporate events.

Writing

I have strong views on user-driven computer interfaces. I was the author of an article on the issues of introducing new computer users to the command-line. I am also fascinated by the low-level operation of modern Operating Systems. I recently wrote another article on how to delve into the internals of OS X.

Miscellaneous

In addition to the above I have a strong interest in typography and typesetting with particular emphasis on the TEX document preparation system. I am also interested in the convergence opportunities offered by the semantic web and the proper use of XML technologies. Finally I am a keen amateur magician.