

## CURRICULUM VITAE

### ASSOCIATE PROFESSOR PENNY DE BYL PHD

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### ACADEMIC QUALIFICATIONS

PhD, University of Southern Queensland, 2002, *The Synthesis of Emotions in Artificial Intelligences: An Affective Agent Architecture for Intuitive Reasoning in Artificial Intelligences [for computer game characters]*

BIT, University of Southern Queensland, 1991

### EMPLOYMENT HISTORY

2008 – Present: Associate Professor of Serious Games, Academy of Digital Entertainment, University of Applied Sciences, Breda, The Netherlands

2005 – Present: Research Lead and Manager of ALIVE (Advanced Learning and Immersive Virtual Environments) Research and Development Laboratory. Serious Game Project managed outlined at <http://www.aliveed.com>

2003-2008: Senior Lecturer in Computer Science (Games & Graphics), USQ

2001-2003: Lecturer in Computer Science, University of Southern Queensland

1999-2001: Associate Lecturer in Computing, University of Southern Queensland

1997-1999: Lecturer in Computer Science, University of New England

1996-1997: Research Information Systems Manager, University of New England

1995-1996: Systems Analyst, Agricultural Research Business Institute, Armidale

1994-1995: Full-Time Honours Student at University of New England

1991-1994: Research Assistant with SIMSTAT, University of Southern Queensland  
Programmer with Dept. Primary Industries, Tutor in Computing, USQ

### PROFESSIONAL MEMBERSHIPS

IDGA - International Game Developers Association

ASCILITE - Australasian Society for Computer in Learning in Tertiary Education

ALT - Association for Learning and Teaching

### MEMBERSHIPS OF EDITORIAL BOARDS OF INTERNATIONAL JOURNALS

Associate Editor International Journal of Gaming and Computer-Mediated Simulations

### RECOGNITION

#### Awards:

- 2008 University of Southern Queensland Teaching Excellence Award (1 given out)
- 2008 Queensland State Government Researcher Fellowship (1 of 4 given out)
- 2008 Faculty of Science, University of Queensland Teaching Excellence Award (1 given out)
- 2007 Queensland Government Smart State Award for Women in ICT.
- 2005 Department of Mathematics and Computing Teaching Excellence Award

- 2004 U.S. game industry 1<sup>st</sup> runner-up best game development tool for “Programming Believable Characters for Computer Games” textbook.
- 2004 Department of Mathematics and Computing Teaching Excellence Award
- 2002 Department of Mathematics and Computing Research Excellence Award

### **Biographies**

- 2008 Biography in “Who’s Who of *Queenslanders* 2008”, Crown Content Publishers (3500 listed)
- 2008 Biography in “Who’s Who of *Australia Women* 2008”, Crown Content Publishers (6000 listed)

### **Grants**

- 2009 Secured PhD Scholarship from *INTEL* for academic colleague to work in the area of Ray Tracing Game Engines **€38,000**
- 2008 Queensland State Government Smart State Fellowship **\$150,000**: *The ICT Knowledge Bar: Developing pedagogy and a virtual community exchange playground to transform student’s opinions about ICT and encourage young Queenslanders to pursue ICT careers.*
- 2008 University of Southern Queensland Teaching Fellowship **\$50,000**: *The Virtual Body: Revitalising Human Anatomy and Physiology for Flexible Delivery*
- 2007 Apple University Consortium Equipment Grant **\$10,000**
- 2007 USQ Equity Incentive Fund **\$14,987.52**: *Title: Building a professional network to mentor rural and regional women in science, engineering and technology*
- 2007 Competitive Carrick Institute Grant, **\$215,368**: *Title: The seamless integration of Web3D technologies with university curricula to engage the changing student cohort.*
- 2007 Mimeo Learning and Teaching Grant, **\$1,500**
- 2006 VC’s Strategic Development Fund, **\$80,000**: *Title: Electronic Assignment Submission System*
- 2006 VC’s Strategic Development Fund, **\$100,000**: *Title: Pedagogical Implications of ALIVE*
- 2005 USQ VC’s Strategic Development Fund, **\$60,000**: *Title: Advanced Learning and Immersive Virtual Environments (ALIVE)*
- 2003 USQ Early Career Researcher Grant, **\$8,000**: *Title: An AI Middleware Paradigm for Programming Emotionally Believable Agents as Non Player Characters in Computer Games*
- 2002 USQ DVC Development Support Fund, **\$10,000**: *Title: An online assessment management system*
- 2000 USQ Affirmative Action Grant, **\$2000**
- 1998 UNE Teaching Application Development Program, **\$25,000**: *Title: Online Multimedia Conceptualisation of Computing Technology for Undergraduate Students*

### **Patent**

2006, An Emotion Recognition System and Method, Filed in Australia, US, Canada, New Zealand, Europe and Japan (Australian provisional patent application 2006901082 and US provisional patent application 60/860845)

### **Interviews**

- 2004 Toowoomba Chronicle Newspaper interview on release of “Programming Believable Characters”

- 2005 The Australian, “New Computer Game Degrees”
- 2006 USQ News “Sci-fi lives long and prospers”
- 2007 Toowoomba Chronicle, “USQ lecturer recognised as state's best”
- 2007 Queensland ABC Radio, “Is it ok for Adults to play video games”
- 2007 USQ News “\$215K grant to boost online learning”
- 2007 New Scientist Invention, “Emotional Avatars”
- 2008 Intelligent Systems IEEE, “Toward More Human Video Game Characters”
- 2008 Teaching and Learning Unit, “Bringing learning ALIVE”

## INVITED TALKS

- 2007 Web3D for Teaching and Learning, USQ Online Education Symposium
- 2007 The ALIVE Project, USQ Teaching and Learning Professional Development Series
- 2009 Augmented Learning, Inaugural Professorial and Media Lab launch, Breda University of Applied Sciences
- 2009 Computer Game Technologies and the Future of Teaching and Learning, Presentation to Commissionaire to the Queen of Holland and advisors
- 2009 Serious Games and Future Learning and Teaching Technologies, Presentation to the Board of Governors, Breda University of Applied Sciences

## INVITED GRANT REVIEWER

2007 & 2008 Australian Research Council Discovery Grants

## RESEARCH STUDENT SUPERVISION (PRINCIPAL SUPERVISOR)

Billy Yue (Honours in Computer Science) *Thesis: Emotional Stereotyping for Computer Games Characters*, Completed 2005, 2<sup>nd</sup> Class.

Damien Clark (Masters of Professional Computing) *Thesis: Enhancing the IMS Q&TI specification by adding support for dynamically generated parameterised quizzes*, Completed 2005, 1<sup>st</sup> Class.

Jiwan Kandangwa (Honours in Computer Science) *Thesis: Investigating Artificial Intelligence Performance in Turn Based Strategy Game using Genetic Algorithm*, Completed 2006

Billy Yue (Ph.D.) *Thesis: Implementing Hierarchical Task Networks for Goal-Oriented Action Planning in Computer Games Characters*, Ongoing

Kae Thong Chew (Masters of Professional Computing) *Thesis: Procedural Generation of Terrains for Games using Fractals and L-Systems*, Completed 2007

Wei Sheng Chew (Masters of Professional Computing) *Thesis: Puppeteering Avatars in Multiplayer Games*, Completed 2008

Shelly Grist (Ph.D.) (Associate Supervisor)

*Thesis: Player personality dynamics in virtual environments*, Enrolled 2008, Ongoing.

## PUBLICATIONS

### **Peer Reviewed Professional Books**

2006 Baillie-de Byl, P., *Star Trek A-Life, Programming Artificial Intelligences for the 24th Century*, Charles River Media, Hingham.

2004 Baillie-de Byl, P., *Programming Believable Non-Player Characters for Computer Games*, Charles River Media, Hingham.

### **Peer Reviewed Book Chapters**

2009 Clark, D & de Byl, P, *Enhancing the IMS QTI to Better Support Computer Assisted Marking, in Methods and Applications for Advancing Distance Education Technologies: International Issues and Solutions*, Chapter 14, Information Sciences Reference, Mankato

2008 de Byl P, *Hybrid 2D/3D Web-Embedded Interactive Simulations, in Designing Games-Based Embedded Authentic Learning Experiences, in Digital Simulations for Improving Education: Learning Through Artificial Teaching Environments* , IGI Press 2008.

2008 de Byl P, *Designing Games-Based Embedded Authentic Learning Experiences, in Handbook of Research on Effective Electronic Gaming in Education*, IGI Press 2008.

2004 Baillie-deByl, P. & Toleman, M., *An Overview of Engineering Emotionally Intelligent Agents*, Encyclopedia of Information Science and Technology, Idea Publishing Group, Hershey.

2002 Baillie, P. Lukose, D & Toleman, M., *Engineering Emotionally Intelligent Agents, in Intelligent Agent Software Engineering*, eds. V. Plekhanova, Idea Publishing Group, Hershey.

### **Peer Reviewed Journal Papers**

2009 de Byl, P., *Making Web3D Less Scary: Towards Easy-to-Use Web3D e-Learning Content Development Tools for Educators*, Innovate, Vol 5. No. 5. Available:

<http://www.innovateonline.info/index.php?view=article&id=554&action=synopsis>

2007 de Byl, P., & Taylor, J., *A Web 2.0/Web3D Hybrid Platform for Engaging Students in e-Learning Environments*, Turkish Journal of Distance Education, vol. 8. no. 3. article 7.

2005 Baillie-de Byl, P., *Bots with Attitude*, International Journal of Intelligent Games and Simulation, Vol 4, No 1, pp. 1-6.

2004 Baillie-de Byl, P., *An Online Assistant for Remote, Distributed Critiquing of Electronically Submitted Assessment*, Educational Technology & Society vol. 7, no. 1, Jan 2004, pp. 29-41.

2003 Baillie-de Byl, P., *A Six Dimensional Paradigm for Generating Emotions in Virtual Characters*, International Journal of Intelligent Games & Simulation, vol. 2, no 2. Oct 2003, pp. 72-79.

2003 Baillie-de Byl, P., *Emotional Influences on Perception in Artificial Agents*, Informatica, vol. 27, pp. 127-135.

2001 Baillie, P. & Lukose, D., *Urging Desire: Motivational Mechanisms for Intelligent Agents with Minds of Their Own*, Cybernetics and Systems, Taylor and Francis, Philadelphia, vol. 30, no. 1, pp. 701-718. (unsolicited invited paper for special edition)

### **Peer Reviewed Conference Papers**

2009 de Byl, P, Is there an Augmented Reality Future for eLearning, IADIS International Multiconference on eLearning, Portugal.

2008 de Byl, P, Developing 3D E-Learning Applications: Lessons Learned for Novice Educators as Content Designers, IADIS International Conference on e-Learning, Amsterdam.

2008 de Byl, P, Design for Engaging Experience and Social Interaction, IADIS International Conference on Gaming, Amsterdam.

2003 Baillie-de Byl, P., Distributed Web-Based Critiquing of Electronically Submitted Assessment, International Conference on Web-based Learning, 2003, Springer, pp. 450-461.

2002 Baillie, P. & Lukose, D., Multidimensional Affect Appraisals for Artificial Intelligences, in Proceedings of ACE, Vienna, Austria, University of Vienna, Vienna.

2002 Baillie, P., An Agent with a Passion for Decision Making, in Proceedings of Agent Based Simulation III, Passau, Germany, 2002, University of Passau, Passau.

2002 Baillie, P. & Lukose, D., Emotional Decision Making in Artificial Intelligences, in Proceedings of IC-AI'02, Las Vegas, June 24-27, 2002.

2002 Baillie, P. & Lukose, D., Emotionally Motivated Artificial Intelligence, in Proceedings of PRICAI '02, Japan.

2001 Baillie, P. & Toleman, M., Creating an Emotional Space for Artificial Beings, in Proceedings of Agent Based Simulation II, Passau, Germany, 2001, University of Passau, Passau, pp. 7-12.

2000 Baillie, P., Lukose, D. & Toleman, M., How to Give an Agent An Attitude, in Proceedings of Agent Based Simulation I, Passau, Germany, 2000, University of Passau, Passau, pp. 7-12.

2000 Baillie, P., Lukose, D. & Toleman, M., Emotional Intelligence for Intuitive Agents: Agents with Attitude, in Proceedings of PRICAI 2000, Melbourne, Australia, 2000, Springer-Verlag, Germany, p. 818.

2000 Baillie, P., Toleman, M. & Lukose, D., Could Emotions be the Key to Real Artificial Intelligence, in Proceedings of ISA'2000, Wollongong, Australia, 2000, ICSC Academic Press, pp. 45-50.

2000 Baillie, P., Toleman, M. & Lukose, D., Emotional Intelligence for Intuitive Agents, in Proceedings of AISAT 2000, Hobart, Australia, 2000, University of Tasmania, Hobart, pp.134-139.

1999 Baillie, P. & Lukose, D., To Believe, to Desire, to Intend: Motivating Autonomous Intelligent Agents with a Mind of their Own, in Proceedings of Managing Enterprises 99, Newcastle, Australia, 1999, The University of Newcastle, Newcastle, pp. 235-240.

### **Granted patent**

2006, An Emotion Recognition System and Method, Filed in Australia, US, Canada, New Zealand, Europe and Japan (Australian provisional patent application 2006901082 and US provisional patent application 60/860845)

## **ORGANISATION OF INTERNATIONAL CONFERENCES**

2006, 2007, 2008 & 2009 GameOn Conference; Georgia, USA. Braunschweig, Germany, Bologna, Italy & Valencia, Spain

2006 IEEE Symposium on Computational Intelligence and Games

2000, 2001 & 2002 Agent-Based Simulation III Conference; Passau Germany

## **FELLOWSHIP AND ADJUNCT POSITIONS**

2008-2010 Teaching Fellow, Queensland State Government, Australia

2008-2010 Adjunct Teaching Fellow University of Southern Queensland Teaching Academy, Australia

2008-2010 Adjunct Associate Professor, Global Learning Services, University of Southern Queensland, Australia