SOFTWARE PROJECTS

From: **Aug 2007** *To:* **-**	***University of Newcastle*** **Senior Lecturer** ***Callaghan, NSW, Australia***
	Teaching, coordinating and developing a range of subjects. These include: Information Systems Development, Information Technology Project, Visual Programming, Computer Games Design, Computer Games Production.

From: **Jun 2006** *To:* **Jun 2007**	***New England Complex Systems Institute*** **Post Doctoral Researcher** ***Boston, USA***
	Developing visualisations, conceptual models and software for applied research projects within the Complex Systems domain. This includes global economic models and the impact of various preventative and acute health care treatments within the USA. NECSI is located in Boston, USA and is associated with MIT, Harvard and Brandies University. Programming work used Objective-C. Assisted in running the Winter School in Complex Systems at MIT, January 2007.

From: **Jul 2003** *To:* **Jun 2006**	***Charles Sturt University*** **Senior Lecturer** ***School of IT*** **(Level 7, Step 1)** ***Bathurst, NSW.***
	Teaching and coordinating a range of IT subjects including: Object-Oriented Modelling, User-Interface Design, Software Engineering, C++ Programming and Java Programming. Setup and running of the Multi-sensory Games Lab

From: **Feb 2003** *To:* **May 2006**	***University of Sydney*** **Research Programming Contract** ***School of IT*** ***Sydney, NSW***
	After my PhD studies I was employed to develop a visualisation of financial data. The application is designed to display live data from the Australian Stock Exchange. The software is developed in Java and uses the Java 3D API.

From: **Feb 2003** *To:* **May 2006**	***University of Newcastle*** **Casual Lecturing** ***Computer Science*** ***Newcastle, NSW***
	During my PhD studies I developed and coordinating the second year course, called Software Processes. This course covers general software process principles. Students learn to measure and improve their own individual software processes. (Based on “A Discipline for Software Engineering” by Watts Humphrey)

From: **May 1999** *To:* **Jan 2003**	***University of Sydney*** **PhD**
	Investigated the design of multi-sensory displays for finding patterns in large data sets. The theoretical outcomes were applied to finding patterns in stock market data.

SOFTWARE - continued

From: **Mar 1992** *To:* **Apr 1999**	***BHP Research Newcastle*** **Research Scientist**

From 1996-1999 my work involved the assessment of emerging and embryonic computing technology and gauging its ability to impact on BHP business domains. These investigations were carried out in collaboration with international research partners, CSIRO and customers within BHP. During much of this time I was part of a research team called the Advanced Computing Applications Project (ACAP). We targeted high risk, high return, and embryonic computing applications for their ability to deliver significant competitive advantage within the 5-15 year time frame. Apart from general technology tracking the two areas evaluated in depth were Intelligent Agent Software Systems and Virtual Environment Technologies.

I also supported more general management roles. These included involvement in RESNET which was a group responsible for disseminating continuous improvement principles within BHP Research. As recognition of these efforts BHP Research won an Australian Quality Award in 1998.

More detailed description of research projects and external collaborations are provided below:

ACAP - Evaluation of Virtual Environment Technology (1997-1999)
An evaluation of the multi-sensory capabilities of virtual environments and the use of virtual environments for collaboration of multi-disciplined teams in the exploration of large geoscientific data sets. This work has involved collaborations with VETL (Virtual Environment Technology Lab), University Houston, GMD (German National Research Center for Information Technology, HITL (Human Interface Technology Lab), University of Washington and CSIRO through ACSys.
[*Software/Hardware: C++, Inventor, Ghost. A range of Virtual Environments, included haptic displays, stereo workbenches, CAVEs]*

ACAP - Evaluation of Intelligent Agent Software Systems (1996-1998)
Design and implementation of an intelligent agent software system for automatic feature detection of patterns from exploration data. This work involved collaborations with University Of London.
[Software/Hardware: C++, Unix workstations]

CAKE – Computer Aided Knowledge Engineering (1995-1996)
A tool to separate changing "knowledge" within a software system and allow end-users to reconfigure and maintain underlying knowledge within the system. It allowed end-users to visualise conceptual networks, update rule tables and equations within the knowledge base. end-user maintainable knowledge bases. The project used object oriented design methodology to performed meta-modelling of knowledge and used advanced graphical user interfaces.
[Software/Hardware: C++, Galaxy, RogueWave. Sun Workstations (Unix)]

GEORISK – Risk Assessment for Geological Exploration (1994)
An expert system designed to aid Geologists in the task of risking Geological prospects. [*Software/Hardware: Borland C++, Protogen. PC (Windows 3.1)]*

MESA – Maintenance Engineering Scheduling Assistant (1993)
A maintenance-engineering assistant that allows interactive and automatic scheduling of work orders to maintenance crews. I was involved in designing, development and implementation of the graphical user interfaces for the application.
[*Software/Hardware: Lisp, Macintosh]*

SOFTWARE - continued

From: **Apr 1989** *To:* **Apr 1992**	***BHP Research*** **Software Engineer** ***Newcastle***
	From 1989-1992 my role at BHP Research was primarily as a software engineer. This involved user requirements analysis, software design and implementation. It included time and cost estimates, documentation and testing procedures. The work involved liaison with researchers within the labs to develop and evaluate a range of software prototypes. More detailed description of some of these projects are provided below: **MABAL – Mass Balance for Processing Networks** A mass-balancing model for flow networks. *[Software/Hardware: FORTRAN, PC (DOS), VAX mini computer (VMS)]* **RAWMH – Raw Material Handling Simulation** A program for tracking raw material handling and reported on breakdown times. *[Software/Hardware: FORTRAN, VAX mini computer (VMS)]* **SACCS – Interactive Caster Scheduling System** An interactive scheduling system for designing rolling plans for a continuous caster. *[Software/Hardware: Ingres Windows 4GL. Sun Workstations (Unix)]* **OPSTOCK – Laser Measurement of Blast Furnace Burden** Software for controlling lasers and electric motors and acquiring measurements from a CRO. *[Software/Hardware: Microsoft C. PC (DOS), RTI-800 Analog to Digital Board, GPIB Board.]* **HMB – Heat and Mass Balance** A heat and mass model of the steel-making furnace (cross-platform). *[Software: FORTRAN, PC (DOS), VAX mini computer (VMS), VAX Decstation (ULTRIX).]* **PLOT – Statistical plotting program** A program that plots specific data collected from experimental trials. [*Software/Hardware: Microsoft C. Hardware: PC]* **RACEWAY – Laser Measurement System** Time of flight depth measurement system for the blast furnace. This software was developed to control the laser measurement system and allow data acquisition and real time data display. *[Software/Hardware: Microsoft C. PC, RTI-800 Analog to Digital Card]*

From: **May 1999** *To:* **Jan 2003**	***University of Newcastle*** **Master of Computing**
	Applied radar-tracking algorithms to the problem of real-time edge-detection of lymphatic vessels for use in physiological experiments.

From: **Feb 1988** *To:* **Jan 1989**	***Comsteel*** **Computer Programmer** ***Waratah, NSW***
	This work involved maintenance and development of commercial software systems. The work was primarily in the areas of payroll and personnel systems. *[Software/Hardware: COBOL. Data General (AOS/VS)]*