

Resumé of Gregory David Baker

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1 Personal Details

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2 Work History

The Institute for Open Systems Technologies Pty Ltd Oct 1999 - present.

(Director and owner – see page 8 for details.)

Aptec IT Solutions 1 Oct. 1996 – Oct. 1999

(Senior Technical consultant)

CSIRO Division of Radiophysics Dec. 1994 - Aug. 1996

(Experimental Scientist)

Self-employed Late 1991 - Dec. 1994 (Impoverished musician)

Peter Jewkes Pipe Organ Builders July 1990 - Dec. 1990 (Apprentice)

3 Academic History

1999-2000 Temporarily stalled Ph.D in Computer Science (Cryptography)

Topic: Lopsided elliptic curves in small finite fields

1995-1996 Meadowbank College

Subject: Cantonese

1992-1996 Macquarie University (B. Sc. Advanced)

Majors: Computing, Mathematics

GPA: 3.75/4.0. First class honours. **Thesis:** “Q-gol: a system for describing quantum computation”

Awards in:

- Geometry and topology
- Group Theory and Abstract Algebra
- Galois Theory, Category Theory, Infinite Group Theory
- Software Engineering

1991 Cumberland High School, Carlingford

Awards in:

- Physics and Mathematics (1991)
- University of NSW Mathematics Competition prize winner

1982-1989 The King’s School, Parramatta

Awards in:

- Latin (1986,1987)
- Mathematics (1988)
- Westpac Australian Mathematics Competition (1st prize winner in NSW in both 1984 and 1985)

4 Languages Known

English This is my native tongue.

Esperanto I don't speak it very well, but will happily spend hours convincing you that you should learn it too. It's fun being eccentric.

German I studied it for 7 years in high school (and got prizes for it!), and have used it occasionally since. Most native German speakers find it so painful to listen to that they beg me to use English instead.

French I studied it for 4 years and still use a reading knowledge of it.

Mandarin I studied it for a year at university, and had a tutor for a while around 2000-2003 until she escaped to Canada.

Bahasa When I was regularly in Malaysia and Indonesia I could string together a coherent sentence, but now I'm lucky if I can still say hello.

Cantonese I've always wanted to know what my in-laws were saying about me, and it seemed that the best way to do that was to learn Cantonese.

Auslan Baby-talk level. Beyond finger-spelling, but not by far.

Latin Somehow I can't see myself using this all that much.

Koine Greek Nor this!

5 Free Software Developed

PyPVM <http://pypvm.sourceforge.net>
Bindings written in C to allow Python programmers to access the parallel virtual machine.

TkVNC Part of TCLLIB <http://tcllib.sourceforge.net>
A VNC viewer written in pure Tcl for maximum portability.

VemFront4.0 <ftp://ftp.rp.csiro.au/pub/demist/vemfront/>
Signal propagation modelling tool

Qgol <http://www.ics.mq.edu.au/gregb/programs>
Quantum computation simulation package

fgvm <http://www.ifost.org.au/Software>
Systems programming tools for building VM-like virtual partitions within versions of Unix that don't support it normally.

microview <http://www.ifost.org.au/Software>
Creates an extremely minimal HP OpenView environment, suitable for untrusted users

6 Publications

Political

April 2004 (and October 2005) Invited to provide evidence on the impact of section 17 (intellectual property) of the Free Trade Agreement between Australia and the USA following submission of “*A Suggestion for Two Small Additions to Chapter 17 of the USA-Australia Free Trade Agreement*”

May 2002 Testified before the Australian House of Representatives Enquiry into Broadband Wireless following my submission of “*Finding A Reasonable Compromise for the Use of 802.11 Equipment in Australia*”

Courseware

- *H4311S Perl Programming (version B.01)*
Hewlett-Packard Education Services Course Schedule, February 2003.
- *Network Security*
HP Education Services Schedule for Australia, June 2002.
Telstra iFactory Internal Courseware, 2001.
- *Sendmail*
<http://www.ifost.org.au/Documents/sendmail-notes.pdf>

Scientific

- *Q-gol: a system for describing quantum computations – Theory, Implementation and Insights*
Macquarie University, School of MPCE, 1996 Computing Honours Thesis (2 external citations)
- *Simulating quantum computers*
Macquarie University, School of MPCE, 1998, to launch the first joint symposium on mathematics and computing.

Computing Conferences

- *It's nearly cheaper to build a smart apartment than a dumb one, but it's much harder work*
Australian Unix User's Group, September 2005.
- *Caffeine-free E-speak – Developing applications without Java*
HP Developer's Conferences in Australia, Korea and Taiwan, May - August 2000.

Musical

- *Background music for Rawlingstock Video Productions 1991-1997*

Poetry

- *Are You a Sub-atomic Entity?*
Megaverse Musings, May 2005.
- *And the noise of background traffic*
Wayfarer, Jan 1995.

Other

- *An Attrition Eulogy and a Biased Review of Web Servers*
<http://www.ifost.org.au/Documents/AttritionEulogy.PDF>
- Ghost-writing radio segments for the then Bishop of Sydney (Ken Short)
from 1987-1989

7 Technical skills

Security skills

- I caught a cracker in June 1998 (but charges were never laid).
- I revised Hewlett-Packard's world-wide course H3541S (System and Network Security) in June 2002 for use inside Australia. An extremely out-of-date copy of it is at <http://www.ifost.org.au/Documents/SecurityCourse>
- There are a few firewalls that I have worked on and/or implemented from scratch – Checkpoint, ipchains, BSD ipf, OpenBSD's pf.
- I have used `nessus` and `sara` as part of penetration tests against some big clients (e.g. Aon Risk Services, Pacific Island Nations Fisheries Consortium, Network Gaming) and many smaller ones.
- I organised several mutual PGP key signing sessions in Sydney from 2000 - 2002.
- I maintained the security patches on all the machines I was managing on behalf of my ISP customers from Nov 2001 - June 2003, with zero breaches.
- I ran penetration testing for what was then Australia's only internet casino, the largest insurance broker's offices in Australia, for the Pacific Island Nations Fisheries and other smaller organisations.
- I uncovered numerous problems in the most popular power plant control software in Australia (also widely used overseas). This caused a national security incident and was under confidence from May 2004 until May 2005.

Systems and system administration

HP-UX Certified HP-UX engineer. Since November 1996 I have regularly taught courses for Hewlett-Packard. I do consulting work for HP. I own a PA-RISC machine. You get the idea.

Linux I have been deploying Linux in commercial environments since 1995, and has been my main desktop since 1996. I have taught courses on behalf of HP and others in Linux administration.

Solaris A total of 5 years experience in developing and maintaining Sparc and x86 systems.

MacOS, MacOS X 12 years' experience.

OpenBSD I have been running OpenBSD firewalls and servers for over 5 years now.

Cisco IOS I have no formal training, but I generally know what to do.

OpenVMS I have a hobbyist's license.

Programming languages

Perl I wrote Hewlett-Packard's world-wide course H4311S in February 2003 (version B.01). People ask me to explain answers to the obfuscated Perl contests.

C/C++ I have been using C-based languages extensively since 1992, The made-to-order C++ training course I delivered for BHP's Port Kembla scientists was praised in the Sydney Morning Herald (in October 1999).

Python My main contribution to the PSA was PyPVM (PVM bindings for Python). I also wrote the Python interface for the now very-defunct E-speak system.

Posix shell I am a confident shell programmer

Tcl/Tk I'm a developer on the Sourceforge `tc11lib` project because I wrote a VNC viewer in pure Tcl/Tk but I can't say I do much other than rest on my laurels over it.

Ada95 I still quite like Ada, but other than that I'm recovering quite well.

SQL I regularly write SQL code, including embeddings in other languages

Haskell,ML I can't imagine an employer needing this, but it's nice to hope.

Erlang I've written a few thousand lines of applications for customers with very high availability needs in Erlang.

Database Experience

Oracle I have done some administration and know some PL/SQL. I have delivered several projects using Oracle backends.

PostgreSQL I have done extensive development and administration with PostgreSQL. The ISP I sold in July 2003 ran all its functions on PostgreSQL.

MS-SQL I've played with it. I developed a small system in 2001 for Aon Reinsurance that required a MS-SQL backend.

MySQL A few of my smaller customers have asked me to do the odd bit of administration on it, and I've used it as a backend database (pre-deployment) during development of a few applications.

8 Institute for Open Systems Technologies

History and Financials

- Commenced in October 1999 by Greg alone as a new private company.
- Started a satellite-based ISP (from Nov 2001 - June 2003) that grew better than 50% quarter-on-quarter until it was bought out.
- Reached \$AUD440,000 per annum revenue in 2004-2005 financial year, with profit of approx. \$AUD40,000, employing 4 full-time equivalent staff.
- Sample customers include: HP; Aon; Fujitsu; MVSS (an IBM subsidiary); Amadeus (one of the main airline flight booking systems in the world); The Prince of Wales Medical Research Institute; Australia's only internet-based casino (before it became illegal); Pacific Island Nations Fisheries (gratis); Technical Aid to the Disabled.

Significant Projects

Signature Control System The most technically advanced smart-housing control system in the world – it includes touchscreens, vision technology, proximity sensors and universal pin access which opens doors, unlocks floors in lifts, turns on air-conditioners and opens boom gates. Other features are shared music libraries, video intercoms, voice-over-IP and integrated billing of water, gas, electricity and internet usage. It is also believed to be one of the most secure and robust systems of its kind (that is, we have searched and can't find anything in the same class). It is currently installed in Stockland's Saville Southbank complex in Brisbane. Several other installations are underway.

The Centre for Organisational Innovation's Organisational Effectiveness Profiling System OEP is an evidence-based system for identifying culture and process problems in large organisations. It now boasts over a million records (question / answer responses) covering 1st and 3rd world organisations from around the world. It is used by a huge range of clients (Booz Allen Hamilton support their consulting work with the Finance Ministry of Lebanon with it; at the other end, it's used by several private schools in Indonesia).

Aon Risk's Marketing Document Management System When insurance brokers engage in "marketing" (finding a spread of underwriters willing to take on a single large risk) they have to supply large customised collections of documents under revision control with strict privacy policies to each underwriter. There's nothing particularly unusual about this, but in a project to merge the software base of several different incompatible systems together we achieved a negative defect rate – the combined system experienced less bugs and less downtime than the components did previously. And we delivered it for under \$AUD2/line-of-code.