Jiří Baum

Personal details

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I am an Australian citizen and have an ABN if required.

Skills

Programming — My current primary programming language is **Python**, in which I program at expert level. I'm also comfortable with C, C++, SQL, shell scripting, R, Perl, Pascal, Ada and PLC stepladder. I write HTML/XHTML, Javascript and CSS for the World-Wide Web, including dynamic websites and interfacing with third-party webservices. I have extensive, up-to-date knowledge of the FOSS landscape.

Communication — I have effective **oral and written communication** skills, speaking and writing with clarity, accuracy and precision. I work well both independently and in a team.

Teaching — I've taken tutorials and/or labs at Monash University in 1999–2005 in computer science subjects, helping students learn and understand the topics.

On a volunteer basis, I have helped new users install, troubleshoot and learn about their Linux systems at monthly workshops in 2009–2012; and teach primary-school children computer science and python programming under CSIRO's Scientists and Mathematicians in Schools program since 2015.

Solutions — I'm good at solving problems and have the knack of coming up with **simple solutions to complex problems**. I have a tendency toward **systematic, analytical thought** and the inquisitiveness to maintain my **broad knowledge** base.

Educational Background

University

2007 — **Ph.D. (Artificial Intelligence)** — *Monash University*
Thesis title: Dynamic Non-uniform Abstractions for Approximate Planning in Large Structured Stochastic Domains

1998 — **M.Comp.** — *Monash University*
Thesis title: Investigation of Modifications to HINT Image Compression

1994 — **B.Comp.(Hons)** — HIIA — *Monash University*
Thesis title: Plan Recognition in Adversarial Domains

1991–1993 — **B.Sc.(Ma. & Comp. Sc.)** — *University of Adelaide*
Major: Computer Science

Certificates — 2012 — Linux Professional Institute **LPIC-1** Junior Level Linux Certification.

Experience

Capital Markets CRC	Since Mar 2014, I've been a Software Engineer, later Senior Software Engineer, at Capital Markets CRC, working primarily on the web-based Market Quality Dashboard as well as the in-house software which supports it by transforming, calculating and preparing the stock market data into the metrics that it displays. *Technologies used: Python, Django, PostgreSQL, Redis, numpy, svn, git, Puppet, Jenkins, Bitbucket, Bamboo, Nagios, Amazon AWS (EC2, RDS, Redshift, S3, CloudWatch), boto, docker, Linux.*
Sabik Software Solutions	In Feb 2013 – Feb 2014, I've been a freelance programmer / computer scientist. *Technologies used: Python, Django, MySQL, git.*
Catalyst IT	In May 2012 – Feb 2013, I was a Developer at Catalyst IT Australia. This involved writing or customising software for dynamic websites, primarily in PHP, troubleshooting issues, deploying new versions and communication with clients. One project was PLANE, a social network used by thousands of educators in NSW and throughout Australia, including a recommender feature, search, single sign-on and webservice integration both internally and with third-party systems. Other projects included an email gateway for a work request management system (in Python) and a specialised communication system for car dismantlers in NZ, as well as contributions to Mahara core. *Technologies used: PHP, Drupal, Moodle, Mahara, Roundcube, Python, SQLAlchemy, Bottle, SQL, PostgreSQL, Javascript, jQuery, CSS, Lucene Solr, XML-RPC, Jenkins, git, Debian packaging, AWS, Linux.*
NICTA	In 2011 I was a Research Engineer at the NICTA VRL. One project involved the extraction of tabular information from PDF files in order to facilitate the preparation of clinical systematic reviews and similar summary articles, leading to contribution of this functionality to the Okular project. *Technologies used: C++, Qt, KDE, bzr, Linux, MS Windows.*
Monash	In 2011, I was also a Casual Research Assistant at Monash University, collaborating on the 2012 publication in Journal of Artificial Intelligence Research.
LUV	In 2008–2012 I was the secretary of Linux Users Victoria, including active participation in the Beginner's Workshops since they started in Feb 2009. This involved helping new users install, troubleshoot and learn about their Linux systems. *Technologies used: various Linux distributions and FOSS end-user applications.*
Birds and ants	Two projects in 2008–2009 for Daniel Spring in the Monash University School of Biological Sciences, modelling conservation and/or eradication approaches on two case studies, the conservation of wild birds in Costa Rica and the eradication of red imported fire ants in Brisbane, Australia. *Technologies used: Python, Numpy/Scipy, PIL, animated GIF, bzr, Linux.*
linux.conf.au	I served on the committee of the 2008 linux.conf.au conference with responsibility for the web-based zookeepr conference management system.

Technologies used: Python, Pylons, Myghty, HTML/XHTML, CSS, SQLAlchemy, SQL, SQLite, PostgreSQL, bzr, Linux.

Juralco — A series of projects for Juralco in the 1990s, including: real time machine control programs for four different machines which produced security grilles; a utility for making backups and other copies; a program to calculate costs of various products; and a utility to extract drawing title, number and date from CAD drawings.

Technologies used: Turbo Pascal, MS DOS, PLC, 8255.

Academic Publications

Karimi, S., Yin, J. and Baum, J. (2015). *Evaluation methods for statistically dependent text*. **Computational Linguistics**, 41(3): 539–548. doi:10.1162/COLI_a_00230

Baum, J., Nicholson, A.E. and Dix, T.I. (2012). *Proximity-Based Non-uniform Abstractions for Approximate Planning*. **Journal of Artificial Intelligence Research**, 43: 477–522. doi:10.1613/jair.3414

Spring, D., Baum, J., Nally, R. M., MacKenzie, M., Sanchez-Azofeifa, A. and Thomson, J. R. (2010). *Building a Regionally Connected Reserve Network in a Changing and Uncertain World.* **Conservation Biology**, 24: 691–700. doi: 10.1111/j.1523-1739.2009.01419.x

Baum, J. and Nicholson, A. E. (1998). *Dynamic non-uniform abstractions for approximate planning in large structured stochastic domains*. In Lee, H.-Y., & Motoda, H. (Eds.), Topics in Artificial Intelligence, Proceedings of the **5th Pacific Rim International Conference on Artificial Intelligence (PRICAI-98)**, pp. 587–598, Singapore.

Paper review — I have done some paper review, including serving on the Program Committee of the AI'09 22nd Australasian Joint Conference on Artificial Intelligence.

FOSS

I have given talks at FOSS conferences and on other occasions.

- SLUG Meeting January 2014 — *Brief Introduction to Programming*
- SLUG Meeting April 2012 — *The Version 3 Effect*
- LUV Beginner's Workshop October 2010 — *What is programming?*
- OSDC 2004 — *Navigation software and Components in the FLOSS world*
- 2003 real-time Linux workshop — *MatPLC: towards real-time performance* (2nd author)
- linux.conf.au 2002 — *Machine Automation Tools*

I have been involved to various degrees in a number of FOSS projects, including:

- zookeepr — web-based conference management system (lead for 1 year)
- MatPLC — an industrial automation system for Linux (founding member)

Outreach

Since 2015, I've been volunteering with CSIRO's Scientists and Mathematicians in Schools, teaching primary-school children computer science and python programming.