Hugh Perkins

Email: hughperkinsjobhk2009@gmail.com
Nationality: British
Date of Birth: 8 May 1973
Phone: 64353960

PROFILE

- extensive experience working in an investment banking environment
- extensive work-experience on both development and systems administration teams
- learn quickly, passionate for technology

SKILLS

Scripting: python, vbscript, powershell, bash, javascript, some erlang
Dev: C++, C#, VB, Java, Python, some Haskell
Dev frameworks: sysalchemy, jinja2, .Net 1.1, .Net 2.0, some .Net 3.0, some J2EE, some hibernate, .Net remoting, DWR, SWIG, asp.net, OpenGL, ajax
Windows systems technologies: Citrix, VMWare ESX, some Exchange, SMS, Active Directory, DNS, DHCP
Ubuntu systems technologies: VirtualBox, AppArmor, iptables, ssh, wine
Databases: MySQL, MS SQL Server, DB2
Operating Systems: Windows, Ubuntu

EDUCATION

1995 **Cambridge University**, Cambridge, England
Bachelor's degree Natural Sciences, Class II.1
Specialties: Physics and Psychology
- British Steel Prize for physics, 1993

1991 Elizabeth College, Channel Islands, United Kingdom
"STEP Levels", grades S, S ("Outstanding"): Physics and Maths
"A Levels", grades A,A,A,A ("Excellent"): Physics, Maths, Further Maths, Chemistry
- Silver Medal in British Physics Olympiads, 1991
- Student of the Year, 1991, Elizabeth College

WORK EXPERIENCE

2009 Gap year: traveling in Asia, learning Chinese

2008 Equity derivatives risk technology developer, "Euclid" team
Lehman Brothers, London

Developer in equity derivatives risk techology "Euclid" team. **Grid computing**, DB2, .Net Remoting, Tibco.

We were 40 people globally, under high pressure from the traders to achieve results; high enough that our managers had a tendency to be summarily fired to add just that little bit more edge to things. The team members were all extremely experienced and intelligent.

Things I achieved:
- Got CruiseControl working, and ensured stability of head build
- Release Manager for the June 2008 release
- Test coordinator for the July 2008 release
- Set up our new UAT environment
- Created proofs of concept for stateless NUnit testing of front-end modules
- Some development work on FX / P&L
- 3rd line support / debugging, including monitoring our batch processes some nights and weekends
- Fair amount of liaison with the Indian development team, eg trained the team on how to start our Staging environment

2007 – 2008 Systems administration, Windows Server Team ("SSD-Windows")
Société Générale Corporate and Investment Banking, Paris, France

Worked in the Windows server administration team. We were a team of 30 people who maintain the stability of the 6000 servers in the SGCIB park.

Tasks included:
- monitoring the servers, and handling exceptions
- proactively implementing monitoring in order to predict failures, or at least detect them early
- responding to requests from clients for improvements in services

Example projects:
- created a website in C# that allowed SGCIB developers to deploy application updates rapidly and easily to their servers
- website to monitor server antivirus status, provide simple diagnostics, and provide one-click utilities to correct common issues
- "Habitation loyer moderé". Website to deploy vmware containers to the workstations on our backup-sites, which are then provided to the Grid teams. Simple, cheap, hence "low-cost housing" (habitation loyer moderé in French)
- spontaneously created application to distribute data to a large server grid using peer to peer. Not actually fully marketed to the business before I switched jobs, but it aimed to solve the problem we had with a file server cluster that regularly fell over when 1000 servers tried to read a data file from it. How the peer-to-peer distribution worked:
  - each server had a small dumb service with a couple of simple methods, the main one being 'copy(source path)
  - a central command and control server first orders one server "1" to copy the data file to itself
  - … then it orders two more servers to copy the file, one from the source server and one from "1"
  - … then it orders four servers to copy and so on
  - copy time changes from O(n) to O(ln(n)), which for 1000 servers is the difference between 20 minutes (1000 seconds for example) and 10 seconds (2^10 = 1024).

2005 – 2007 Systems Administration Development Specialist
Desktop Technical Services, Société Générale Corporate and Investment Banking, Paris, France

Worked in systems administration, specialized development in C# to DTS and other ITEC/GLS teams.
Looked for solutions to common problems to save time. For example, created a system called Pushbutton for DTS which provides a website to developers to deploy applications themselves, at will, to any site of their choice.

The Pushbutton system is written in C# and uses the following technologies:
- Threading, to ensure we can deliver files to multiple servers in parallel
- .Net Remoting, to provide real-time communications between on-site agents
- Asp.Net + some Ajax.Net, for the website
- Webservice, to provide communications between the website (which runs as the connected user) and the backend services (which run as administrator, elevated privileges). The website acts as a proxy into the .Net Remoting infrastructure
- Extensive use of Reflection: dynamically reads/writes xml files from C# classes; dynamically creates web forms from C# classes

Created a website for the Paris server team to carry out Sms deployments. This used an architecture of asp.net -> service web -> .Net Remoting -> service windows with elevated privileges. A fun part of this project was writing a short generator (~100 lines) that converted WMI/Wbem SMS classes into strongly-typed C# classes, which strongly facilitated development, making it easy to create SMS advertisements etc directly from standard C#.

2003 – 2004 LSL scripting, SecondLife

Negotiated and executed scripting projects for private clients within SecondLife. At the time rates for scripters were trivial - cents per hour - but with a bit of luck, and some good scripting, managed to find clients willing to pay reasonable rates. Moved to Asia and lived comfortably.

Various random small projects, and a chunk of work on an MMORPG project, before starting to write the Open Source Metaverse Project (OSMP).

Small project: SLVoting website for Lindenlab

Proactively thought of the idea of a website allowing voting for new features. Implemented it, in Python, then sold the website to LindenLab. It's changed a little since then (http://secondlife.com/vote/), being migrated to jira in the last year or two. The original version is at:

http://manageddreams.com/slvoting

2002 - 2003 **Third Level Support, Desktop Systems Administration**
Desktop Technical Services, Société Générale Corporate and Investment Banking, Paris, France

Member of 24 person team providing deployment services, transversal services and third-level support for the 11,000 Windows workstations across Paris and London, and for PC-based applications worldwide. I specialize in application deployment, remote access technologies ("@-access"), printer management, user and group management, file security management, and disaster recovery.

Automation, Systems and Processes:
The following were created and deployed from scratch, except where noted:
AlertBase alert management system comprising alert reception, storage, and presentation, via web and email (C#, VBScript, Javascript)

- Citrix server monitoring websites, to check configuration between farms, and across applications
- Pushbutton Automated Application Deployment System (upgrade of earlier system)
- Pushbutton Citrix Automated Application Deployment System: replicates applications to the ~60 Citrix
- servers
- Pushbutton-Worldwide Automated Application Distribution System. Reliable incremental ftp in batch
- Group Creation Tool: standardized Group Creation tool for use by Helpdesk
- File Security Administration Tool, for use by Business, that allows direct control over who accesses a
- directory
- DTSMonitor clustered monitoring service, to monitor all critical scripts, batches, and the batch machines
- themselves
- DTSMailService, reliable mail service that provides easy, guaranteed mail delivery to scripts
- PdfByEmail Print to Email system and corresponding print client, to facilitate printing from Citrix
- PrinterManagement tool, which standardizes printer creation for Helpdesk (upgrade of earlier system)
- Printer Migration service to migrate about 2000 locally Unix-based printer queues to W2K network queues
- Account Migration infrastructure to consolidate Windows user accounts from six domains into one
- Reporting for Pushbutton deliveries, server printer queue changes, group modifications and Disaster
- Recovery client status

These products were developed using VBScript, Javascript and VB, except where noted.
Supervised an intern for a project on the integration of PXE and multicast into the SGCIB masterisation process, to facilitate Disaster Recovery.

3rd Level Support:

- Provided support and transversal services to second level support, to developers, to Business, and to application managers.
- Participated in Disaster Recovery tests

Application Deployment and Roll-out:

- Deployment of applications, patches and updates throughout the infrastructure of London, Paris and Europe
- (eg Framework .Net, WSH 56, master patches) using SMS
- Application integrations using SMS Installer and .msi (various business applications)
- Creation and execution of rigorous test suite for use against NAS file servers undergoing selection
- Synchronization of application servers to facilitate management.
- Standardization of account group naming to facilitate group management by both Helpdesk and Application Managers
- Normalization of account group description to be easily parsed by batch files
- @-Access, Citrix Desktop access over the Internet. Built the web-site and setup the Citrix servers

2002 **Windows and Network Consultant**
Mandragore Technology Management, New York, USA

Provided training on Windows 2000 Server, Professional and Active Directory, and on Cisco routing, switching and remote access in preparation for the Microsoft Certified Systems Engineer examinations and the Cisco Certified Network Associate certification. Provided regular lab sessions on all aspects of networking and Windows, such as application deployment and VOIP.

Conducted a technology infrastructure audit at the North American sales office of a telecommunications company, identifying business exposure and recommending key infrastructure changes to reduce risk. Provision of VPN remote access using L2TP over IPSec.

Prototyped VMWare GSX on Linux and Windows 2000 Server host machines, using multiple guest OSes

including: NT 4 Server and Workstation, NT 4 Terminal Services, Linux, Windows 2000 Server and Professional and Windows XP. Prototyping of remote PXE-based desktop imaging (RIS and Rembo), software deployment using GPOs and Veritas Winstal le), and diskless client technologies using LTSP to provide diskless Windows Terminal Services clients.

VoIP research for network convergence and PBX replacement. Specifically, use of Cisco technologies to provide VOIP services using Cisco CallManager clusters, Cisco DSP farms, MGCP and H323 (v1, v2) gateways, Cisco SCCP IP Phones, conferencing, transcoding, MOH, PLAR, dial-plan configuration.
Implemented and supported Active Directory, Exchange 2000, ISA, IIS with web authoring and OWA over SSL, TS, SSH, Certificate Services and VPN for Mandragore's internal operational infrastructure. Provided
proprietary scripting logic to significantly enhance resiliency wrt soft failures.

1999 to 2001 **Senior Windows Engineer**
CS Systèmes d'information, Paris, France

CS Systèmes d'information is a major IT consultancy based in France. It provides IT deployment, migration and administration services.

I was the Senior Windows Engineer on the site of Eurocontrol. I ran a team of 5 people providing day-to-day support and management of the NT systems on-site. We were responsible for rolling out projects and upgrades both on request by the client, or following our identification of projects and upgrades which would facilitate site management and improve the service to the client. There were 500 client stations, and 20 Windows servers including 4 Windd servers.
Technologies used included: Windows 2000, NT 4 Server and Workstation, Macintosh, SMS 2, DHCP, WINS, Windd, NAS bay, HP TopTools, Checkpoint FW-1 with VPN, Shiva dial-in, Networker, Netscape Server, Exchange 5.5, SQL Server, Oracle 7 and 8, IIS 4, RemoteDesktop, RAS.
I achieved the following results:

- took over the Windows station and server operations from client
- managed the creation of the documentation set for the Windows operations
- upgraded the PC mastering process to a flexible, manageable, modular, hardware-independent system.
- automatically deployed applications and configuration updates
- deployed and managed file, print, system management, application and WTS servers
- deployed DHCP in conjunction with the network team
- deployed SMS 2 server and client
- managed the creation of SMS Installer packages
- deployed an automatic upgrade to Windows 2000 Professional to pilot workstations

I provided third-level support for the Cisco Remote Access routers. We had 4 DDR BRI lines to access remote sites (Copenhagen, Malmo, Geneva and Rome), a 1Mbps leased-line to our ISP, and a 256Kbps leased-line to the Brussels central site.

I provided support to other CS clients on an ad-hoc basis. For example, I was sent to Milan in Italy to help deploy a remote sales office for Electricité de France (EDF).

1999 **Network and systems engineer**
Normand Informatique, Paris, France

Normand Informatique provides technical services for Microsoft products: NT Server, NT Workstation,
Exchange, SQL Server and MS Proxy.

- Technological survey: 128-bit encryption, MS Proxy security
- Third level support
- Intervention on-site: installation of NT servers and resolution of system and networking problems

1997 to 1998 **Developer, C, C++, Visual Basic**
Midnight Solutions Ltd, London, England

Member of a team that exploited a market for year 2000 bug-fix products for PCs.

Specification, design and implementation of products in Visual C, Visual C++ and Visual Basic

- Year 2000 programs (Visual C++, Visual Basic, QuickBasic)
- Gateway for the conversion of faxes in Hexar format into TopCall format, for a large merchant bank (Visual C++)

Network Administrator for Midnight Solutions' NT network.

1996 to 1997 **Developer, C, C++, RDBMSs**

Strategic Thought Ltd, London, England

Creation of solutions for the RDBMS Ingres using C and C++ in an environment of Unix (especially AIX and DG), Windows NT, and Windows.

Contax project, Dublin (sub-contracted to Andersen Consulting)

- implementation of gateways between the client components and the Tuxedo middleware; and between Tuxedo and the server components
- the gateways were written in CA-OpenROAD 3.5, Data General Cand COBOL. The client components were written inCA-OpenROAD 3.5 and the server components in COBOL
- reported to the director of Strategic Thought

CABS2000 Commissions System (sub-contracted to SEMA)
member of a four-person team which created a sub-system for the calculation of commissions due to mobile phone network operators
the sub-system was written in Visual C++ and accessed an Ingres database
conception and implementation of on of the three modules of the sub-system
co-ordination and conception, and some implementation of the common classes, and their interfaces

Performance Testing With VTest (sub-contracted to SEMA)
a management system for mobile phone network operators was in the process of being stress-tested
responsible for the verification and delivery of the documentation for the performance test software (Vtest, VMS)

Magic / Ingres gateway (internal project)
localisation and correction of bugs in the Magic / Ingres gateway
worked with the assistance of a technician who searched for the bugs
Magic is a rapid application development system (R.A.D.) for database applications
the gateway was written in C on AIX Unix

Summer 1994 **Physics research internship**
Scientific_Generics, Cambridge, England

Investigation of a novel medical application of infra-red spectroscopy. More specifically, the use of the Doppler effect in combination with IR-spectroscopy in order to specifically target the blood (which moves). This could allow a diabetes test to be non-invasive.

1991 to 1992 **Physics research internship**
Shell Research Ltd, England

Project 1: investigation of the oil-film thickness between a cam and rocker-follower using an electrical capacitative technique
Project 2: validation of the electrical measurement of oil film thickness using an optical technique ('Newton's rings') in order to provide a validation of the electrical measurement technique used in project 1
Project 3: investigation of oils for use in an infinitely-variable gearbox

OPENSOURCE PROJECTS

AILadder

AILadder http://springrts.com/phpbb/viewtopic.php?f=15&t=20358 runs AI bot battles for the http://springrts.com across multiple servers, that can be NAT'd and firewalled. It's written in Python. Architecture here: http://manageddreams.com/ailaddergrid/architecture.py

The central web-site is very light-weight in terms of processing power, and doesn't require any daemon other than apache. So, it can run on a shared web hosting.

The botrunners – the servers that run the AI matches – pull requests from the server, so they can be firewalled, and NATed, without introducing any complications. The botrunners are very cpu and memory intensive because they run instances of the Spring rts, and run a full bot battle until one bot dies.

Technologies used include: xmlrpclib, SQLAlchemy ORM, and Jinja2 templates.

Headless spring

Quick 24-hour project. Actually, it took 17 hours ;-) from http://springrts.com/phpbb/viewtopic.php?p=381530#p381530 to http://springrts.com/phpbb/viewtopic.php?p=381662#p381662

The goal was to enable http://springrts.com to run headlessly, on a machine without a graphics card and without needing to connect to an Xserver. Spring RTS is an rts which runs over OpenGL, displaying everything in 3d. Two approaches were possible: the clean approach of rearchitecting into model and view, clearly better, but likely to take months and lots of negotiation, and the quick solution: stub out the calls to SDL and OpenGL by linking with our own stub library. Ultimately it would be nice to have the clean rearchitected solution, but I wanted something that worked right now, and here it is:

http://github.com/hughperkins/springheadless

You can see that hoijui, who is the guy who is likely to do the full rearchitecture at some point, is using and committing to this fork, which is a good sign for both its approach and its durability.

Java AI for Spring RTS, "HughAI"

http://springrts.com/wiki/AI:HughAI http://springrts.com/phpbb/viewtopic.php?f=15&t=20262

Spring rts (http://springrts.com) is an RTS based on Total Annihilation. It's possible to write one's own AIs for Spring rts.

Java AI is an AI I wrote, in Java, ported from an earlier AI I wrote in C#. I ported it to Java because that makes it more portable across the different platforms that Spring runs on, and means that it can potentially be packaged with the main Spring deliverable.

Directplay patch for winetricks

Very quick before-breakfast project: added directplay support to winetricks http://code.google.com/p/winezeug/source/detail?r=622#

Patch to Springrts to work with certain ATI cards

Quick before-breakfast patch: http://springrts.com gave a corrupted display on certain ATI cards. Investigation showed it was a problem with clipping of lines failing in ATI. After discussion with team members http://springrts.com/phpbb/viewtopic.php?f=11&t=14964&view=next , added in an AtiHacks configuration value, and fixed the issue.

Map Designer for TASpring

http://spring.clan-sy.com/phpbb/viewtopic.php?t=8094&postdays=0&postorder=asc&start=60

Design multitexture splatted terrains in real-time.

Written in C#. Uses OpenGl, multitexturing, splatting, GTK.

C# AI for TASpring

http://spring.clan-sy.com/wiki/AI:CSAI

TASpring is an RTS based on Total Annihilation. It's possible to write one's own AIs for TASpring.

C# AI (CSAI) beat all other working TASpring AIs (NTai, AAI, TSI) at the time it was created, using a rush strategy. It beat NTai because it made more effective use of basic units. It beat AAI because it grouped units, and retreated if necessary.

C# Interface for Spring RTS

http://springrts.com is an opensource rts engine which can run Ais written exposing a C++ API.

http://springrts.com/wiki/AI:CSAIInterface

CSAI was an interface layer that allowed AIs to be written in .Net, and in Mono. It linked to TASpring using a Reflection-generated interface. The TASpring C++ interface was downgraded to a C interface, to provide ABI compatibility, then reabstracted up to an object-oriented interface on the C# side.

Haskell generic xml serialization

A little mini project, but it does show involvement in Haskell, and the Haskell newsgroups. I wrote a short prototype for a generic xml deserializer, which can be found in section 6 "Reading/Writing between XML and Haskell data types without XML picklers" at:

http://haskell.cs.yale.edu/haskellwiki/HXT/Conversion_of_Haskell_data_from/to_XML

And my name can also be found in http://okmij.org/ftp/Haskell/generics.html wrt the question of generic Haskell deserialization.

interrogate2swig

http://www.panda3d.org/phpbb2/viewtopic.php?p=16539&highlight=#16539

Feasability study into the possibility of migrating the http://panda3d.org build procedure to use the widely used http://www.swig.org instead of the panda3d-specific http://www.panda3d.org/wiki/index.php/Interrogate

Panda3d is a 3d graphics engine written in C++, with bindings written so that one can control it using Python. The bindings are created using a proprietary executable called 'interrogate', which I found quite slow, and so I spent some time considering to what extent it could be possible to migrate to the more standard – and considerably faster – SWIG.

Fast network rpc over udp

http://metaverse.svn.sourceforge.net/viewvc/metaverse/Trunk/Source/Metaverse.Networking/

Actually a part of OSMP, but I feel it stands out on its own. C# has .Net Remoting, but it runs over TCP/IP. Transmitting time-sensitive data over TCP/IP, eg for games, has a serious issue: the tcp layer will not pass out-of-order packets up the stack, so if a single packet is missing, all packets following it are held up until the missing packet has been resent.

By implementing our own RPC layer over UDP, we could handle packets, even when they were out of order.

The downside meant that we had to handle things like packet acking and resending ourselves.

Open Source Metaverse Project (OSMP)

http://metaverse.sf.net

3d collaborative universe, based loosely on SecondLife

Developed initially in C++, migrated to C++ with Python, and Lua for in-game scripting. Currently C#.
Major components included:
- parametrized prim renderer, over opengl (http://sourceforge.net/project/screenshots.php?group_id=136861&ssid=11816)
- use of ode physics engine
- fast network RPC layer over guaranteed UDP, using Reflection (see section above)

Cited in:
- New Scientist http://www.newscientist.com/article.ns?id=dn7372&print=true
- Wired http://www.wired.com/gaming/gamingreviews/news/2004/12/65865

CERTIFICATES

Cisco Certified Network Professional: CCNA, CCNP (expired, ref. CSCO10144399)
Microsoft Certified Systems Engineer: MCSE, MCP (expired, ref 946334)
Microsoft Certified Solutions Developer: MCSD (expired, ref 946334)
HP Certified Consultant: HPCC (expired)

LANGUAGES

- English: Mother tongue
- Spanish: Intermediate, lived in Spain for 1 year
- French: - Bilingual

- lived in France for 4 years
- diploma in French civilization from Sorbonne University, Paris

- Mandarin: Basic conversation, reading and writing, lived in China for 2 years (Guangdong, Yunnan)