

# Curriculum Vitae: Lee Goddard, BA (Hons), MSc

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## Status

British citizen, born 1971. Married with two children. Self-employed since 1999. Resident in Hungary and the UK.

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## Qualifications

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### 10/1999 - 10/2000: MSc in Intelligent Systems

UNIVERSITY OF SUSSEX GRADUATE RESEARCH CENTRE FOR COGNITIVE SCIENCE, BRIGHTON, UK

**EPSRC scholarship.** The MSc is now entitled 'Artificial Intelligence.' Courses in Java, C, Prolog, Software Design & Development; Software Development Lifecycle; Human/Computer Interaction; Programming for AI; as well as AI-oriented studies. Software developed: automatic route finding; automatic flamenco; XML converters, low-level socket communications; intelligent agents. Final dissertation: XML/XSLT implementing DATR/PROLOG. Considered one of the best programmers of my year

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### 9/1996 - 7/1999: BA Honours in English, 2:1

UNIVERSITY OF SUSSEX, BRIGHTON, UK.

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## Skills

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### General

**OO analysis and design, Agile planning, implementation, development and documentation** of: multi-stage transactional DB-integrated website applications/sites (CMS / RDMS / MVC / archive- and workflow-management). XHTML/JS/CSS AJAX GUI. Client/server pairs, web harvesting/scraping/mash-up, various agents, artificial neural networks; some genetic algorithms, complex data conversion and filtering, multi-thread, multi-process; system automation and testing; web design. LAMP with MySQL, Oracle, etc. Development planning and work allocation and Agile/spiral management for small teams of two to six people. Commercial experience since 1999. Member of the Agile Alliance.

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### Key Skill: Perl, mod\_perl

Daily experience since 1997: object-oriented modules and extensions. Without wishing to appear blasé: although I can program in most languages, I consider Perl my mother tongue, and can confidentially program high-quality, easily-maintained, fully-documented, highly logical Perl as fast as I speak my native language. Well, it is ten years.

Author of over 30 CPAN modules since 1997; long-time CPAN tester and active in online communities.

mod\_perl / CGI – scripts, modules, imaginative use of Apache hooks

DBI – MySQL, Postgres, Oracle; SQLite (including in C); DBIx::Class, Class::DBI

Bespoke Relational Database, Content Management Systems, and MVC since 1997, including a wiki in 1998

HTML, JS, CSS, AJAX (Mootools, and/or bespoke hand-coded)

Catalyst and associates

Perl TK/TCL – author of the CPAN Tk::Wizard module-set, the only Perl Wizard GUI framework

AI techniques – image recognition and manipulation, Kohonen SOM and various neural nets (also in C, Java and Prolog)

Client/server/IPC – via direct sockets and libraries

Complex business/legal/scientific data filtering and conversion (also in C and Java)

Complex document processing – RTF, XML, HTML, PDF, CSV (also in C and Java)

Web harvesting/scraping – various techniques inc. LWP and HTML::TokeParser

XML – since inception: DTD and schema authoring, XSLT, FO processing; use of SOAP; RSS manipulation

Mail – POP3, IMAPI, SMTP web interfaces, direct and via Postfix alias.

Testing – best-practice automated unit, functional, and acceptance testing in Perl

Templating – Template-Toolkit, HTML-Template, SSI, some Mason, lots of bespoke templating systems

Wiki – Twiki and bespoke wiki systems, my first for the Sussex Student Union in 1998 (references available!)

Some XS and Inline::C

Familiarity with a variety of programming patterns, techniques, and archetypes.

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### Secondary Skill: Java

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2009 spent with Maven-based Spring, Tomcat, Jetty, Junit, MySQL, JDBC, Hibernate, in a multi-tiered controlled environment. Various libraries. Low- and high-level UA/client/server architecture; XML/Xpath/XSLT/FOP; HTML-parsing; analysis and bug-hunting in bespoke multi-threaded systems. Geocoding with JTS/etc.

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### Preferred Methodologies

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Spiral test-driven development of object-oriented code, acknowledging compromise is generally inevitable. Call it Agile, Scrum, XP/Extreme Programming, Pragmatic Programming. Would like to attend the official Agile course.

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### Analysis

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Requirements capture/gathering, system analysis, workflow analysis, object- and data-modelling, accessibility and usability. Real-time and managed client- and end-user expectation management.

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### Documentation

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Technical, academic, client-oriented and end-user documentation, in a variety of styles and conventions, for a variety of audiences: from academic to business-oriented, 'POD perlstyle,' to Sun Javadoc. All levels of English (UK and US), for both native-speakers and International readers.

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### Automated Testing & Building

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Script-driven (perl-based) automated testing of class/object/method expectations, of user cases for problem reporting and bug-fixing. Benchmarking. Perl based silent and Tk::Wizard installers and build systems.

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### Large-scale Refactoring

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Familiarity and confidence in refactoring legacy systems written in a variety of languages, using repeatable automation, test-driven and model-based techniques.

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### Other Skills

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**ANSI C:** client/server pairs and scientific/AI programming at university; some PCM (sound file) processing at the BBC; SQLite3, LibIPTC, Enlightenment Thumbnail combination for super-fast commercial photo agencies. Perl Inline::C, GCC/ANSI/POSIX, some DJGPP.

**XML technologies;** since release: XSLT; Xpath; Xlink; Formatting Objects (XSL:FO, PDF); DTD/Schema authoring; DOM/SAX; SOAP; Cocoon; Saxon; Xpat; Xalan; MSXML3; Sun/Apache/IBM Java classes; RSS.

**Databases:** MySQL (some stored procedures), Postgres, Oracle, PL/SQL interfacing with Perl DBI; SQLite.

**HTTP:** low-level knowledge since 1997, including Web DAV/Delta 5 and bespoke extensions.

**POP3/SMTP/NNTP:** low-level since 1998, for bespoke mail servers and clients; sendmail.

**Google Maps API** – dynamic maps, KML, map design tools, Perl- and Java-encoded polylines, etc.

**HTML 3.1 - XHTML** (since 1997: cross-platform, dynamic, to W3C specifications)

**JavaScript** (since 1997: cross-platform; ECMA/JS 1.5; pre-AJAX AJAX, PacMan in 1997) Mootools, etc.

**CSS1/2/P** (since release) **LDAP:** OpenLDAP, MS AD LDAP: Perl controls, scheme creation

**PROLOG** and **POP-11** (at university); BASIC (18 years); PASCAL

**AI:** To Masters' level: Kohonen SOM; back-propagated artificial neural networks; decision trees; compression; image processing including snakes. Considering SVG.

**Subversion** for dev, admin and as workflow application core: build, install, maintenance, hook scripts, authenticated Apache web dav with hooked authorisation

**RT:** build installation, customisation, extensions, mail gateways

**Servers:** Apache (Linux/Win32); IIS5; Tomcat; J-Serve; Cocoon; custom HTTP

**ASP/JSP;** some AxCKit, Cocoon

**Photoshop** to an advanced level, some Illustrator; Dreamweaver, etc (though by choice I code by hand);

**Mentor and tutor,** both in-office and online, since 1997

**Some Linux admin** (mainly Debian): the usual development and build tools, such as CVS, SVN, cron, httpd, vi, make, diff, mysql, chown, chmod, user/groupadd

**Natural Languages:** zum Deutsch, kicit Magyar (a little German and Hungarian),

**Jazz-**inspired guitar with influences from Metallica, Kenny Burrell, Paco Peña, Pete Townsend, Buddy Holly, Hubert Sumlin; folk music from Israel, Hungary/Transylvania, Spain, North Africa, Tibet..

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## Professional Experience

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Apart from a full-time position at ProCheckUp and Advertising.com, all positions are through my own limited company. I have also created and maintain 30+ CPAN (open-source freeware Perl) modules.

Some minor contracts are not shown, in an effort to save space.

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### Net-a-porter.com – Test engineer

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6/2010 – 9/2010

Limited on-site contract, implementing Hudson builds, organising and adding to an aged test framework, providing self-creating data units based upon database introspection, automated creation of database fixtures.

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### BBC.co.uk / wildlifefinder – Lead Developer / Architect

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12/2008 – 2/2010

75% telecommute. In his year-end e-mail of 2009, BBC Director General Mark Thompson singled-out this website as "sum[ming] up for me what I want the BBC to be," complimenting praise from senior management for its design and implementation, and from all UK broadsheet newspapers for its intent, content and usability.

Design of two bespoke REST DB-exploring prototypes in Perl, for two DBs, in as many weeks.

Design and implementation of Maven-based bespoke RDMS Java/MySQL web application

Custom regular-expression mapped controllers six months before Spring

Use of Spring JDBC Template

Data sourcing in a variety of formats – RDF, XML, XLS, CSV, HTML, SQL, Arc Shapefiles

Data normalisation, optimization, cross-referencing, mapping

Data served in a variety of formats – JSON, XML, GIF, KML

Perl system to automatically associate Wikipedia pages with several taxonomies

Bespoke Shapefile to SQL, AWT images, and KML, optimized with JTS and relations.

Encouragement and enforcement of Scrum and Agile management (introduced daily stand-up scrums; sprint planning with story points; sprint retrospectives)

Liaison with slow-to-delivery, politically sensitive departments.

Liaison with expert and inexperienced staff, with some mentoring.

Regular reports to Technical Project Manager and Producer; occasional reports to higher-level management.

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### FreeDharma.com – Developer / Architect

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7/2008 -

100% telecommute. Conversion, indexing and publication of a variety of ancient Asian texts in standards-compliant HTML, plus RTF/PDF/txt. Template Toolkit, MySQL, inverse-frequency indexing. Mootools.

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### Northfoto.com – Developer / Consulting

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8/2008 -

100% telecommute. Search-engine and CGI tweaks for Eastern Europe's largest photo agency.

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### FutureLAB AG – Developer / Architect

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WWW.FUTURELAB.CH – 2/2008 - 5/2008

99% telecommute. Two-part contract with a Swiss provider of online services: the design and implementation of a Google map to reflect data gathered by a public-facing German-language RDMS, with a variety of prototypes culminating in post-processing of Google MyMap Javascript, KML, and HTML to produce a variety of switchable map overlays, interacting with a partially-documented bespoke system. Also, a service to create semi-random but aesthetically-pleasing PNG and XML layouts for printable photo albums.

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### Glaxo-SmithKline, Molecular Discovery Unit – Senior Systems Developer

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WWW.GSK.COM – 8/2007 - 12/2007

Contract to work with a system developer in updating unique legacy drug discovery software to run on Linux, after 20-plus years of installation on Irix. Coded in Perl, TCL, C, Fortran, with a large number of integrated shell scripts in a variety of flavours. We succeeded largely by my ruthless enforcement of the project owner's excellent plan: a full test suite (Selenium and Perl) prior to the OS move, plus a new build system, with my own strict coding standards. On completion, learnt that the project had twice failed before, even though I have seen it marked as "completed" on another person's CV. Was offered an extension to add new features, but the 100-minute in, 100+ minute out commute made a longer stay impractical.

## Advertising.com – Senior Systems Developer

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WWW.ADVERTISING.COM – 3/2007 – 8/2007

Permanent role. Developed from conception this AOL/TimeWarner company's first two workflow systems. User case analysis and rapid prototyping lead to an unusual e-mail front end to a fairly standard pair of workflow systems. Some corporate infrastructure improvements. Some extension of legacy applications. Choice of the Catalyst base and lack of Class::DBIx/DBIx::Class resulted from limited on-site support ability. Reported to the European Technology Manager. Projects commissioned by (and reported directly to) Vice President of European Technology. Projects supported and beta tested by business team managers, reporting directly to myself. Role promised promotion which did not appear in time, and control of a team which did not emerge.

## BBC Radio & Music Interactive – Research & Development

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WWW.BBC.CO.UK/RADIO4 WWW.BBC.CO.UK/RADIO1 – 4/2006 – 1/2007

**Audio Annotation Service:** Full implementation in mod\_perl/MySQL of a web service. Conceived of by R&D as a Wiki for web-accessed mp3 files of BBC radio programmes. Implemented as a RDMS CMS with bespoke version control and ACLs. Output in bespoke XML and RSS. Restrictive mod\_perl environment (Apache::Registry) with very limited access to CPAN. Written quickly with batch tests to a REST protocol to interface with an already developed Flash interface. Extensively evolved specification. Extensively documented. Secret public (sic) trial under-way on R4.

**SMS Visualisation** Cron'd Perl code (using Task::Schedule) and forking Perl daemons to monitor a Spread bus of live SMS messages. The SMS XML had a stop-list and inverse-frequency (TFIDF) filter applied, and the remaining data, along with databased records of its frequency within a 'decay' period made available to live servers in a variety of forms: PNG pie and bar charts, XML and CSV structures, as well as in more *avant garde* forms. Project extended to accept HTTP input for the **BBC Electronic Proms**. Latest: SMS to be used by Radio 1 on their homepage. Currently running live on the BBC **Radio 1** website, coming to Five Live soon.

**Radio Four Website Prototype:** mod\_perl extension to Apache to provide pragmatic RDMS and some CMS, interfacing with external XML REST interface, Template::Toolkit and various output formats (full HTML, SSI HTML, XML, JS objects), within an environment lacking a data model or sufficient data-source.

**Documenting** and usability testing of the BBC External Developers' Server.

**Audio Graphing:** Perl, C and XS code to create graphs (PNG, XML) of mp3 files' PCM content, using existing Open Source software. Reported to Head of BBC RMI R&D; Project Manager Radio 4 Website.

## The European Aviation Safety Agency of the European Commission

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WWW.EASA.EU.INT – 6/2005 - 2/2006

EASA is a recently-created independent Agency of the European Commission, responsible for aviation safety across the European Union, planned to replace the national aviation authorities of EU member States.

Sole analyst and senior developer working directly under the Software Development Manager. Responsible for design and set-up of Linux development environment, from choosing and building software (Apache, Subversion, RT, etc) to implementing development policy documents. Full software development lifecycle, from user requirement/system meetings and analysis, functional analysis, system design, implementation and development. Instructing Oracle PL/SQL developer on requirements for DB business logic and API, for effective interaction with my mod\_perl and Template Toolkit OO modules. VMware-hosted RedHat within a Windows environment. All projects were self-initiated spiral-model test-driven development, sole analyst/programmer with a dependent Oracle programmer. Included:

**Web-based authenticated auto-versioning for Windows' Explorer** using Perl, Apache, mod\_perl, OpenLDAP, Subversion. AuthLDAP authentication within Apache for full auto-versioning Subversion WebDAV. Formed the basis of the next item.

**Si2 Electron Document- and Workflow-management System** integrated into standard European Commission DB architecture, working with EC accounting documents, compliant to legal framework..

**CRT Electron Document- and Workflow-management and Publication System** integrated into standard European Commission EC legal framework, working with legal documents.

**User base** reusable OO libraries for internal and external system users.

**Consultation** on Internet and Intranet website content management and distribution systems.

## The BBC – Digital Curriculum / BBC Jam

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WWW.BBC.CO.UK/INFO/POLICIES/DIGITAL\_CURRICULUM.SHTML – 11/2004 – 5/2005 (EXTENDED)

The Digital Curriculum (now BBC Jam) is the £150-million BBC flagship project to provide electronic support for teachers and students of the British National Curriculum. Media includes the web, SMS, and cable TV. In co-operation with Microsoft and Siemens.

Sole developer implementing SCORM package CMS / RDBMS, within larger technical team. Analysis and development in a high-pressure environment. Self-initiated spiral development of an Apache mod\_perl extension to process zip archives of SCORM XML documents, using OO Perl, SOAP, Template Toolkit/HTML, and interacting with an alpha-level Microsoft bespoke server. Debian, Windows. Introduced RT and test-driven "extreme programming" development.

## ProCheckUp Ltd

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WWW.PROCHECKUP.COM – 10/2003 - 11/2004

ProCheckUp are the most advanced penetration and subversion security testing company in the world, using artificial intelligence techniques to test any IP, and to automatically discover new vulnerabilities, thus cutting testing time from days to minutes. FTSE500/NASDAQ clients. Recent winners of the Queen's Award for Innovation in Industry and a SMART award.

**Lead developer** of a team that varies in size from four to two, with individuals from developer, security expert, technicians, QA. Full life-cycle management, responsible for all aspects of the ProCheckNet Appliance:

**Analysis** of the situation and documentation of needs from a verbal brief.

**Project planning**, spiral development model: initial fast prototyped version developed with the "extreme programming" practice of frequent releases. Allocation of human resources.

**Hiring** of staff: job descriptions, fielding of agents, interviewing with and without the Technical Director.

**Development** of extant code base – a poorly-written but effective linear command line/flat file Perl application – into an object-oriented Apache mod\_perl server application. Multiple user-levels and diverse functionality. Design and implementation of relational database. DTD design. GUI design.

**Documentation** of every class and method, project overview, and end-user manual.

**Server-side technologies** used: Red Hat, Debian; Perl, Apache mod\_perl (multiple hooks), relational SQL databases in (DBI) Postgres and MySQL, SVG/JPEG graphing; Blowfish encryption; XSLT manipulations of XML from DBI/SQL; RTF template manipulation from DBI/SQL.

**GUI design/dev:** DHTML/CSS, event-based JS, HTML DOM; Perl Win32::GUI.

**Teaching** object-oriented design, perl, object-oriented perl, mod\_perl

Reporting to Chief Technical Office.

## PhotoWebserver

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NORTHFOOT KFT – 7/2002 - 10/2003

100% telecommute. Online photo archiving and sales software developed with leading press photographer, and winner of the Times Press Photograph of the Year, Mark Milstein, in Budapest (northfoto.com). Apache mod\_perl interface to relational database of (IPTC) image information embedded within images. User tracking and monitoring, graphing and reporting. Image manipulation. Reports in HTML, RTF, PDF via HTTP. Various interfaces: HTTP, FTP, POP3/SMTP.

## Singapore Bookshops

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WWW.SGBOX.COM SINGAPORE BOOKSHOP – 4/2002 - 5/2002

100% telecommute. Simple custom e-com engine in Perl for what was then Singapore's only online bookstore. Perl, HTML, JS. HTTP B2B interfaces (WorldPay, PayPal, etc).

## Polygon Kft

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WWW.POLYGON.HU POLYGON KFT – 2/2002 - 5/2002

100% telecommute. Consultant providing analysis, bug-shooting and technical documentation of proprietary client-server AS/400-Windows middleware application used by Europe's biggest banks. IBM-sponsored. Found and resolved major threading issue within live production system.

The Java application is a server (should have been an Apache extension), that sends and receives XML to describe forms composed of SWING widgets, which are used to provide a graphic interface to financial software running on the banks' AS/400s.

## The Virtual Health Network

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WWW.VHN.NET VIRTUAL HEALTH NETWORK & DATAPHARM – 9/2000 - 8/2001

100% telecommute. The Virtual Health Network act with Datapharm – an off-shoot of the Association of British Pharmaceutical Industries – to provide industry-related data to professionals the wider medical industry and consumers.

**Sole developer**, working directly under the Technical Director, to implement 100% of the project, which was initially to convert a repository of several thousand badly-formed HTML documents to XML. After successful completion before schedule, this was extended to create a web-based application to convert MS Word documents to XML in real-time.

The documents in question were summaries of medicinal products, which British law requires be readily available in the public domain prior to the release of a drug. The sooner these documents are available, the sooner the drug can be released. Prior to my work for VHN, drug companies had to stay the release of a drug until the annual publication of a reference book.

**Analysis** of the situation and documentation of needs from a verbal brief.

**Project planning**, spiral development model: initial fast prototyped version developed in three-month stages.

**Development** of DTD; Perl used to turn badly-formed HTML to XML. Java and XSLT used to turn XML into HTML/JavaScript, XHTML/CSS, and PDF.

**Documentation** of every class and method, project overview, and end-user manual.

**Server-side technologies** used: Windows Server, Perl, Java/XSLT manipulations of XML (see Java/XSLT in 'Skills Summary'). SQL databases in (DBI) Oracle 8i.

Reporting to Chief Technical Officer.

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### **General Electric Lighting, Europe**

WWW.GELIGHTING.COM WITH AGENCY DESIGN MOTIVE - 6/2000 - 8/2000

Web-design functionality for what was at that time a largely print-based design house. Excel spreadsheets into DHTML/JavaScript through Perl; multiple dynamic layers/animations; to within a pixel of the strict designer's brief. Mac/Windows network

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### **Ready 2 Shop**

WWW.READY2SHOP.COM WITH AGENCY VICTORIA REAL - 1/2000

The dot-com venture of BBC1's Trinny and Suzanna. Use of HTML, JS, Perl for user-input SSL/HTTPS ordering section of the fashion site. Unix/Linux network.

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### **Visa Euro**

WWW.VISAEURO.COM WITH AGENCY VICTORIA REAL - 12/1999

HTML and Perl modifications and updates to the secure high-security multi-national Visa finance site. Real-time work in synch with telephone conversations with Visa in Geneva. Windows/Unix network

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### **University of Sussex Students' Union**

VOLUNTEER 1997-1999

Website developer and then developer/manager, implemented one of the world's first Wiki Content Management Systems. Solaris environment.

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### **Object**

To make a comfortable living in an ethical environment through creative use of as much open-source software, W3C Recommendations and best practice as possible, without getting hung-up on academic principles for their own sakes.

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### **Related Interests**

Continued study of the XP/Agile development model, potentially to MBA or PhD level.

Continued study of web-site ergonomics; visual and logical accessibility of software; also potentially to PhD level.

Continuing development of MSc Artificial Intelligence projects on computer-composed music.

Image categorisation using hierarchies of Kohonen SOM.

Neurological state influenced by simulated hormone waves

Wide-reading: historical fiction; classic sci-fi; John Berge, Mark Helprin; Buddhist-related texts; psychology, neurology, sociology, social-commentary.

An interest in all human-played music: bop, The Who, Django, flamenco.

Multitrack recording/home studio.