

## PROJECTS

---

### **Web portal with underlying knowledge management system** Ganzeria, 2006

Created a knowledge management system and a Web portal for a university-based sustainable agriculture program using the free Plone CMS.

- Empowered and trained the program staff to enter and edit content easily over the Web and to tag content with customizable keywords so that one item may appear in several places in the Web site.
- Migrated content from the old static Web site that required administration by the university's technical staff and had many instances of multiple copies of the same item.
- Included features to enable the planned future expansion to a wider community of content contributors: Web-based WYSIWYG editing, review workflow for publishing, and role-based access control.

### **Custom sales force planning desktop application** Ganzeria, 2005

Redesigned and extended a Visual Basic 6 desktop application used by a major pharmaceutical corporation for sales force planning.

- Added a LINGO-based linear optimization module to calculate the allocation of representatives across sales groups that maximizes profit.
- Worked in close contact with end users to develop a new multi-document user interface with much-improved usability.
- Improved the software over several months of frequent incremental releases, implementing over 100 wishlist items to the delight of the user community.

### **Newspaper content management system** Ganzeria, 2005

Created a content management system for a start-up bi-county weekly newspaper using the free Plone CMS.

- Set up, configured or outright implemented Web-based WYSIWYG writing of articles, review process for editing and publishing, metadata based on article types, keyword tagging, full text search, role-based access control, ad hoc content types, automatic export to Adobe InDesign.
- Trained reporters, graphic designers and sales people to use the system.

### **Prototype VoIP PBX system** Ganzeria, 2005

Created a prototype VoIP PBX system using a combination of free software and off-the-shelf hardware to replace a proprietary unit as part of the experimental remote ordering system of a nationwide fast food restaurant chain.

- Interfaced existing VoIP software dialer with drive-thru sensors (loop detectors) to control communication with the remote call center and in-store switches to select the operational modes of the box.
- The prototype saves \$5,000 per restaurant, provides extra features such as remote programmability and voice mail notification, and will lead to easier and faster adoption of the remote ordering system by the chain's thousands of restaurant operators.

### **Office LAN + Internet gateway solution** Ganzeria, 2004

Designed and implemented full-blown, dirt-cheap office LAN + Internet gateway solution for a local nonprofit.

- Upgraded existing Windows workstations for networking and deployed ethernet through the office.
- Turned old, donated desktop PC into office server and Internet gateway running Debian GNU/Linux.

- Configured domain-wide user authentication and file sharing through Samba.
- Set up a 56K dialup permanent link to the Internet using the nonprofit's existing ISP account and shared that connection throughout the office via NAT.
- Configured dynamic DNS to associate the server with a domain name, enabling the organization to host their own Web site and give distinctive mail addresses to its staff.

### **Self-managed Web site**

#### **Ganzeria, 2004**

Created self-managed Web site for the local chamber of commerce using the Zope application server and an external SQL database to store member data.

- Designed new site and page layout.
- Migrated content from old, static site.
- Trained staff to use the system and take over its administration.

### **Mail, Web and file server**

#### **Ganzeria, 2004 to present**

Set up and administered Ganzeria's mail, Web and file server, running Debian GNU/Linux with Exim, Courier, Squirrelmail, Apache and OpenSSH. Hosting and managing several commercial and nonprofit domains beside our own.

- Security upgrades.
- Web statistics.
- Wiki farm based on Zope.

### **Web-based salvage auction system**

#### **SEI Information Technology, 2003**

Profiled performance and monitored data integrity in a nationwide Web-based salvage auction system.

- Selected, analyzed and interpreted a number of Perfmon and SQL Server data sources and issued a daily commentary for the client's top managers.
- Contributed code to the batch reporting system.

### **Checkout coupon printing system**

#### **SEI Information Technology, 2002**

Sole developer of a program to support an experimental checkout coupon printing system for a nationwide fast food restaurant chain. The program monitors and filters the network traffic to and from restaurant cash registers, extracts order data in real time and relays it to the coupon printing system. To minimize development time and achieve maximum portability, the program is written in Perl and relies on a widely available open-source library (libpcap) for monitoring the network.

- Gathered requirements and wrote functional specifications.
- Worked with the client's developers to analyze and interpret restaurant cash register network traffic.
- Evaluated and selected appropriate open-source components and the implementation language.
- Wrote 2,200 lines of Perl in seven modules and a short driver program.

### **Remote access to in-store back-office server**

#### **SEI Information Technology, 2002**

Redesigned and rewrote a custom Windows desktop application used by the restaurant managers of a nationwide fast food chain to connect to their in-store back-office server and administer it remotely in real time.

- Developed 15,000-line Borland Pascal application using Delphi 6 and Jet, created an installer and wrote the help system.
- Added the ability to generate and download various status reports, send messages to personnel, download menu prices, update them offline and upload them in batch to multiple stores.
- Provided 24/7 developer-level support during beta testing and incorporated many additional features suggested by

testers. Delivered the application against very tight deadlines.

### **Sales force automation solution SEI Information Technology, 2000 to 2002**

Led a team of three developers to create a custom sales force automation solution built on top of SalesLogix, SQL Server, Borland InterBase and Windows Terminal Server for a leading provider of real-time service and business assurance software. Although based on SalesLogix, the system included about 1,000 custom plug-in modules, totaling more than 50,000 lines of code, and various extensions using Perl, HTML and XML for reporting and integration with financial software.

- Gathered requirements, created functional specifications, participated in design reviews, created the initial set of application reports using IQ/Objects.
- Developed a drop-in replacement to the SalesLogix Process module to meet the client's specific needs in scheduling and monitoring their business procedures.
- Incrementally designed and supervised the creation of a library of standardized plug-in modules that cleanly implemented business rules, keeping the system manageable and extensible.
- Analyzed and radically enhanced SalesLogix's monolithic security model, allowing sales people to share ownership of accounts while keeping opportunities private, as per the client's policy.
- Designed and implemented a "SalesLogix sync monitor" written in Perl that used FTP and ADO to generate HTML and Microsoft Excel reports of the synchronization activities of remote users.
- Prototyped a code generator in Perl that created screens, scripts and documentation for a plug-in module from a high-level description written in a pseudo-Basic language.
- Managed the upgrade of about 200 users worldwide to version 5.2 of SalesLogix while preserving the customizations specific to the application.
- Trained and directed the client's team of programmers to take over the system.

### **Nuclear medicine pharmacy support system SEI Information Technology, 1998 to 1999**

Enhanced the standard SQA Suite testing environment for the system acceptance test and provided implementation support for a client/server pharmacy support system for an international pharmaceutical firm specializing in nuclear medicine.

- Developed a library of procedures in SQA Basic to support robust, automated, context-independent test scripts, and designed a flexible text file format to enable testers to enter large amounts of data into the system, with the library handling all of the parsing, actual data entry and error reporting.
- Added support for alternate log files in HTML to make test results accessible by any machine with LAN access, and used the make utility to automate the generation of test data files from existing Microsoft Excel worksheets and the production of HTML documentation.
- Provided initial on-site support to users at 4 US pharmacies and remote support with the conversion process to 2 other sites.
- Wrote Perl scripts to automate the building of individual system components for new releases.
- Redesigned and extended the standalone program for converting legacy data from various existing hospital systems for the system's hospital extension.

### **Software for the CDF experiment Fermi National Accelerator Laboratory, 1994 to 1998**

- Designed, managed and maintained GA, a highly modular and easily extensible cross-platform physics data selection program, with 30,000 lines of FORTRAN code.
- Adapted an innovative, flexible output format to make information readily available to the group, enabling it to conduct correlation studies essential to its research, a task that required a deep understanding of the CDF data model and event structure and an expert knowledge of the CDF software libraries.
- Used a combination of scripting tools (Perl, shell and DCL) to enable the building and operation of the program on VMS machines under UNIX remote control.

## **Software for the KLOE experiment**

**Laboratori Nazionali di Frascati, 1991 to 1994**

- Redesigned and rewrote the core of GEANFI, the KLOE detector's main simulation program, increasing its speed tenfold and reducing the size of its output by half while maintaining the same accuracy in simulation.
- Designed and coded GUNPAK, a FORTRAN interface library to the data format used by GEANFI. GUNPAK enabled physicists with no expertise in simulation to access and analyze GEANFI data cleanly and easily.
- Provided on- and off-site assistance to 30 researchers who were the primary users of GUNPAK.
- Designed, coded and developed EMCAL, a fast and accurate simulation of the early KLOE electromagnetic calorimeter prototype (both the detector and its front-end electronics).
- Supported and consulted with LNF users, ranging from undergraduate students to senior researchers, on programming languages, operating systems, text processing and typesetting, and data analysis software.

## **RELATED**

---

See <http://ganzeria.com/~andreaparri/resume> for my resume and <http://ganzeria.com/~andreaparri> for my professional home page.

## **META**

---

Last updated: March 2006.

The most up-to-date version of this document is <http://ganzeria.com/~andreaparri/resume/details>.