

Karl Forshaw

94 Carr Forge Road, Hackenthorpe, Sheffield, S12 4FP
Email: i_am@karlforshaw.co.uk

Personal Skills

- I am a confident individual and I thoroughly enjoy my work.
- I work well in a team of developers, and am comfortable working as lead.
- Running my own small software company has given me a strong work ethic.
- I pride myself on my inter-personal skills, being a strong conversationalist and a keen listener.
- I love a challenge. Working in this field gives me the opportunity to stretch myself often and suites my persistent nature.
- I have been developing websites and web software for over seven years.

Technologies

Experience Summary

The bulk of my technical experience lies in Web Development, with over seven years of both on and off the job self training. I currently specialise in PHP and MySQL and have five years professional experience working almost exclusively with these technologies.

PHP

- Comfortable Working with PHP4 or 5.
- Working solely in Object Oriented PHP.
- Complying with the Zend Coding Standard.
- Comfortable with the MySql Interface at the command line.
- Comfortable with Exception Handling.
- Comfortable with XML Parsing.
- Capable of developing scale-able solutions.
- Using Code Igniter Framework.
- Using the MVC, singleton, factory, and other design patterns.
- Comfortable with the GD Library.
- Compiling PHP from Source on GNU/Linux Box
- Extending Moodle
- Extending Joomla
- Extending SMF

- Extending PHPBB
- Advanced WordPress theme and plugin development
- PHP architecture experience

MySQL

- Comfortable with Stored Procedures
- Functions
- Database design
- Compiling MySQL from Source on GNU/Linux Box

JavaScript

- Extensive use of Scriptaculous and Prototype libraries.
- Extensive use of DHTML and Ajax technologies (favouring JSON)

C++

- Comfortable using GTKMM Libraries.
- GNU/Linux based development.
- XML Parsing using libXML.
- Using Singleton & Factory Patterns.
- Comfortable with the SQLite C++ Interface.

Other Technologies and Concepts

- SQLite
- UML Modelling
- Peer Review
- Pair Programming
- HTML XHTML
- CSS
- Flash/ActionScript
- C#
- Visual BASIC
- Apache
- Ajax

Operating Systems

GNU/Linux

- Fedora
- CentOS
- SuSe
- Ubuntu
- Debian
- Gentoo
- Mandriva

Mac/Darwin

- Mac OSX

Windows

- Windows 95
- Windows 98
- Windows XP
- Dos

I tend to work exclusively on Linux machines now, having shed windows three years ago. I do however own a Macbook, and thoroughly enjoy using it.

Work Experience

One Theme Ltd

Position: Director, Architect

Sector: Software/E-Commerce

From: August 2008 to present

Set up in the summer on 2008 by a respected WordPress theme developer and myself; One Theme (the product) is a theme engine for WordPress. The engine delivers additional functionality to WordPress whilst providing a framework for theme developers to incorporate One Theme features into their themes.

Technically the product has two areas of development: The themes that we developed for use with the additional features, and the control panel interface for the management of them. I am responsible for the design and development of the latter, as well as all the internal systems and shopping cart integration.

The control panel interface makes extensive use of AJAX to deliver its functionality. It is coded for use with PHP 5.2 in order to make use of the JSON functions added in this version. The JavaScript makes use of the Prototype and Scriptaculous libraries in order to provide speed and ease of use to the end user.

Some of the technical accomplishments of the software (One Panel):

- Import and Export of settings and data.
- Licensing mechanism to limit the number of installations to one per license.
This is done by sending a request using fsockopen() to our servers for validation on initial load.
- Automatic post thumbnail generation.
Allows the end user to upload, or enter the URL of an image. The system then generates thumbnail images of the appropriate sizes for the theme in use and stores them on the user's server, as well as adding the relevant "post_meta" to the post in order to attach the generated images to the post.
- Easy string manipulation.
A module that allows the end user to quickly search out and change strings of text used by the theme without changes to files. These modified strings are part of the One Panel data and therefore stored as part of the Import and Export process.

A comprehensive list of features can be found at <http://www.one-theme.com/features/> along with a demonstration video.

Additional development projects

- Admin System
A system that allows the technical staff to view sales data, and manage login information and licenses.
- Member's System
A system that permits end users access to the products and licenses they have purchased.
- Shopping Cart
A lightweight shopping cart that specifically addresses the requirements of One Theme, making use of the PayPal gateway via IPN and PDT.

The Admin and Member's systems make use of the Arooba PHP framework detailed further within this document.

World First UK LTD

Position: Lead Developer, Architect, Consultant

Sector: Financial Services

From: January 2008 to January 2009

World First are a large foreign currency broker based in South London. I was enlisted to assist in the development of their Online Trading system in January of 2008. The system is fairly complex and requires interfaces with both BARX (Barclay's foreign exchange platform) and the World First 'back office' systems.

To handle the Barclay's FX interface, a Java based FX server was contracted. The server's purpose was to provide up to date exchange rates to the Online Trading system, as well as providing a gateway for the ordering of foreign currency. One of my responsibilities was to liaise with the developers in order to develop the API for integration with our PHP based system.

My team were required to develop two systems simultaneously: The Online Trading platform (designed for the the customers of World First), and the Admin System (designed for the trading staff). Both of these systems were developed with the Arooba PHP framework (detailed below).

Technical Accomplishments:

- **FX API/Intergration**
An abstraction layer to facilitate communications between Online Trading and the FX server. The FX server acting as a middle man between Online Trading and BARX (Barclay's Capital).
- **Spreads Management**
A complex step by step wizard for the management of 'spreads' (percentage addition to rates for profit generation). Completely AJAX based, also allowing for the in-line editing of table cells.
- **IBAN Validation**
A comprehensive library of regular expression driven methods to validate IBAN numbers provided by the end user.

Arooba (non commercial)

Position: Architect

From: January 2008 to present

Arooba is a PHP framework developed by Nigel Johnson and myself on the same paradigm as the system developed at Derby University for the Learning Through Work project. It's aim is to offer an abstraction layer for HTML, favouring an approach similar to MFC, or GTK – using HTML elements as PHP objects. The system not only allows for faster interface development but prevents any basic HTML errors from bothering the programmers. To date the entire HTML 4.01 standard has been implemented.

Arooba is LGPL licensed and therefore can be utilized by both open source and commercial projects. It has been implemented by myself for both World First and One Theme. As of yet the software is still in its infancy and requires further planning before shipping an official release. The

code is available on request from myself.

Black Pig

Position: Senior Developer, Consultant

From: October 2007 to December 2007

For a brief period of time I was posted at Black Pig, a web development house in Royston – Cambridge. Whilst there I assisted in the completion of two outstanding websites as well as offering consultancy around version control and coding standards.

The University of Derby

Position: Lead Developer, Architect

From: August 2006 to October 2007

The University of Derby won the contract to develop a new system for UFI learn direct. The system is known as Learning Through Work. It provides a base for working individuals to gain higher level qualifications through their profession.

I was hired as the junior developer in a team of two, but due to numerous changes I was later assigned the role of lead in a team of three developers.

The system developed takes advantage of certain elements of Moodle (a popular open source learning management system) to provide learning management and conferencing capabilities. However the majority of the functionality was delivered through custom code by extending Moodle. The system is coded using Object Oriented methodology in PHP5 using aspects of the MVC (Model View Controller) design pattern.

The requirements team at UFI Learn Direct are thorough to say the least, and various levels of design and documentation had to be completed to a high standard before development could officially commence. A complete model of the system was delivered via UML and detailed work flow diagrams, along side a comprehensive written report of each system module.

The project presented us with a number of difficult tasks, the most challenging of which being satisfying all the requirements without 'hacking' the Moodle source code (in order to preserve the upgrade path). Everything we developed was designed as an extension to the software using the developer guidelines laid out by the Moodle development team.

Technical Accomplishments:

Robust Design

- UML Modelled Design
- Use Case statements
- Use Case Diagrams
- State Diagrams
- Workflow Model (GUI Map - non-UML)

Role based access system

- Uses predefined roles to display different options to the user once logged in.
- Prevents access to areas of the system of which the user is not permitted.

Editable Application Form System

- Provides each university subscribed to the system with the functionality to edit their application form on the site.
- Provides robust validation routines based on regular expressions.

Moodle Course Data Abstraction Layer

- Provides an abstraction layer for the the manipulation of Moodle Course data.
- Ensures that an upgrade of Moodle will only require an upgrade of the abstraction layer and not the custom applications using it.
- Designed using the factory pattern to allow for future Moodle versions.

Custom Framework

- Built-in Benchmarking
- Exception Handling
- MVC Structure
- Extend-able
- Scale-able

Site Command (tailored content management system)

Position: N/A (sole trader)

From: July 2006 to August 2006

A product previously developed (as a sole trader) in order to offer clients a service maintainable to themselves.

Some of the features developed:

News Management

- Takes Title, Date, and Text from the user and stores them in a MySQL database.
- Also offers 'Forum Link' which is a bridge with the PHPBB Forum, this creates a new forum thread for the news article and places the link on the news page ('Discuss this in the forum').

Mp3 Player

- Split into categories (or 'albums').
- Offers an upload form to add new songs.
- Uploads the mp3 to a folder on the server and enters all the song info into the database.
- Creates a PHP file (myPlaylist.php) which returns a Variable string that Flash can use to import the song information and location(s).

Gallery

- Split into categories.
- Offers an upload form to add new pictures.
- Checks that the uploaded picture is a valid JPEG, stores it to a folder and into the database.
- Creates an extra 'thumbnail' Image (100px x 100px) and stores it in the same location.

Calendar

- Displays a form to collect the date, location, title, info and time of the event.
- Stores it in the database.

- Only displays future events.

This CMS is in use by Estate Agents, Recording Studio's, Bands, Retail Outlets, Construction Companies, and Photographers.

Click Bathrooms.co.uk

Position: PHP Developer

From: January 2005 to January 2006

Click Bathrooms is one of the largest online bathroom retailers in the UK. I worked as their sole PHP developer, modifying their existing Shopping Cart system from Ecommerce Solutions.

A series of modifications were carried out during this period and towards the end of my time with the company I had almost completely rewritten it.

Technical Accomplishments:

- Improved search engine.
- Logging of search keywords into the database for analysis in the admin console.
- Using PHP, MySQL and JavaScript together to create dynamic tooltip boxes which would house important product information from the database.
- Re-write of the way the categories work, including the automated migration of over 2000 products from one database table into another. This worked by storing MySQL queries into the categories table, which were generated on the creation of the category allowing a product to appear in any relevant category. This was put in place to create pages which could be linked to from Google AdWords (landing pages).
- Affiliate Site Feed Generator, automatically generated feeds by pulling product information from the database and submitting them to the four affiliate companies we were using at the time.
- Moved various page elements around and made better use of keywords for Search Engine Optimisation.

References

References are available upon request, please do not hesitate to ask.

Character and Interests

I spend the majority of my spare time reading: Perusing my interest in philosophy and the sciences. I also have a keen interest in music, being a silent partner in a recording studio in Sheffield.

I'm a keen advocate of critical thinking and try to apply it to as much of my life as possible, especially my work.

I try not to be self indulgent, and therefore I digress.