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SUMMARY

With more than twenty years experience in software and embedded systems development, I have worked with a wide variety of clients from large corporate companies to small private businesses, developing both software and embedded hardware solutions. My computer software skills are based on Microsoft technologies and languages, developing for commercial software projects. I have worked in many software areas including large database and reporting systems, commercial products and embedded software systems.

Electronics design and build, from prototypes to complete commercial hardware products, is a large area of my work. Embedded systems based on PIC and AVR eight and sixteen bit controllers used in small devices all the way to higher end ARM32 silicon devices such as Cortex M3 for the larger more demanding solutions. I am currently moving some projects into the FPGA arena, based on the Spartan 3AN devices using Altium Nanoboards.

I have extensive schematic and multilayer PCB design and layout skills using both Altium Designer and EasyPC Pro.

PCB (Printed Circuit Board) design and fabrication to commercial standards (using Altium Designer) is an important part of my current every day work, I primarily work with surface mount devices both in prototyping and final product, down to BGA (Ball Grid Array) sized chips, soldered using reflow techniques. I have many year of manually soldering boards with smd devices using microscope visual aids.

My primary software development language is Microsoft C#, for software systems, and both C and assembler for the embedded firmware development.

I spent many years as a freelance commercial photographer in the 1980s, working with major companies like St Ivel, Intel, Motorola, producing technical product photography and brochure work for publication and exhibition.

SOFTWARE DEVELOPMENT

Computer Languages

- C#, Visual Basic, MS Office, DotNET Framework, Compact Framework, Micro framework, ASP / ASP.NET & HTML, SQL Server, DTS, ADO, XML, UML, MPLAB ASM, and Mitsubishi PLC ladder programming.

Software Development Tools

- **Development:** C#, VB6, Visual Studio.NET, ASP.NET, XML, IIS, ADO, Code Rush, Refractor Pro.
- **Database:** SQL Server, SQL Express and MS Access.

Embedded Languages

- Embedded C, Assembly (ASM (AVR & PIC)), some VHDL and Verilog.

HARDWARE DESIGN AND DEVELOPMENT

PCB Design and production

- Altium designer schematic capture and PCB design to production standards.
- EasyPC for smaller low cost projects not requiring full commercial project management.
- Altium nano board FPGA designs.

EMPLOYMENT HISTORY

SENIOR RESEARCHER (EMBEDDED ELECTRONIC SYSTEMS R&D)

DISTANCE LAB LTD May 2008 – Present day

Joining Distance Lab in early 2008, allowed me to focus all of my electronic design and build skills towards developing may new and innovative electronic products both within digital media related areas, working in smart textiles and wearable sensors. I was involved in patent and trademark applications and IP, along designing and testing to CE and EMI standards for commercial products.

I am technical lead for a spin off company called Lost Values Ltd, who work in many areas of fashion and wearable technologies.

I have also worked in the areas of remote and near field sensing, and digital communication systems, I have worked as tech lead for many projects within Distance Labs wide range of research. Wearable computing and telehealth are also major areas in which I work. Developing fully working prototypes, and finished commercial electronic and software products, collaborating with other researchers to create innovative new designs and ideas.

I also design and build electronic products, which are further licensed to third party companies for inclusion within their own product ranges. Examples include, custom power and battery charge management, targeted development systems and motor control devices.

I also produce shoot and edit videos for the lab using Final Cut Pro and other related software packages.

DIRECTOR

INTERACTIVE DISPLAY SYSTEMS LTD 2006 – May 2008

In 2006 I started IDS Ltd. And started to work very closely with some large public sector companies like Scottish water.

I over the last couple of years been concentrating on creating bespoke software products to increase the range of services that I offer as a company. This has included consulting work as a technical advisor for some very large projects.

IDS worked mainly in the mobile communications area producing interactive products that were designed for public events and services. From interactive screens using mobiles phones to voucher discount schemes used by retailers, again using mobile phones. I have two registered trademarks Backchat® and TxtBack®.

OWNER

EN-TIER 2003 – 2006

I started EN-TIER in 2003, to provide IT services to small to medium sized businesses that do not have their own IT support and software development departments. I offered hardware and software installation and custom software development. My main services tended to be software and network support. Other areas I offered included database development and data migration, along with data cleansing and maintenance services.

Over the three years I also developed the initial versions of my mobile phone applications Backchat® and TxtBack® interactive mobile phone software for conferences and events. One of the largest software packages that I produced during this period is called “ArtStudio” this is a business software package for artists. This package was developed with the co-operation of client James Hawkins an artist in Ullapool. (www.rhueart.co.uk)

SENIOR SYSTEMS DEVELOPER

Halcrow Group Ltd, 1999 – 2003

- Primary responsibilities include design and development of major business applications, also development of data integration solutions.
- Development of human resources and management systems using Visual Basic, Sequel Server, OLAP, ASP and HTML.
- I also ported many internal paper forms to web based electronic versions, also developing web based database reporting systems.
- I specialise in developing data integration solutions. eg: Automatically updating MS Exchange mailbox details from our HR system etc

ANALYST/PROGRAMMER

MOS Computers Ltd, 1998 – 1999

- Primary responsibilities included rewriting DOS based software to Windows, and adding new functionality to the existing systems.
- Responsible for a small team of four developers.
- Developed and tested new warehouse point of sale, and accounting systems using Visual Basic.
- Performed Y2K modifications on existing MOS financial software.

PROPRIETOR

Creative Light & Magic, 1988 - 1998

I started CLM in 1988 to provide photographic services to local companies and other commercial photographers. I mainly worked with companies like St Ivel, Motorola, Anchor, and Intel.

I also produced a lot of embedded systems to enhance and replace the electronics within many of the laboratory equipment that I and other photo labs used. This was to fill a gap in the UK marketplace due to the un-availability of spares for most lab machinery.

- Developed all internal IT systems for CRM and business reporting.
- Embedded systems design and build using 8051 & 8952 architecture devices, designing and building replacement high spec photographic laboratory devices for use in professional photographic labs.
- Designed and built a PLC based control systems for controlling industrial photographic paper processors.
- Developed and built many microcontroller based products to upgrade existing hardware systems to a higher specification and improved performance and tolerances.

PHOTOGRAPHY SKILLS

IDS Ltd – Electronics, Software, Photography & Photo Montages (2006-2008)

I have also worked on many photographic and video projects. Working with Halcrow group, a global civil engineering company, producing photographic montage visuals for proposed new construction and services sites. This involves taking photographs according to client specs and producing visuals of the finished sites with buildings and works included, using CAD design documents for the specifications. These montages are then submitted along with planning applications.

I specialize in producing finished images that are as photorealistic as possible, not CAD looking. This involves tree and plant growth over time and aging of materials etc.

PERSONAL

I am married with two daughters, one sixteen and the other nine years old.

I enjoy photography and video work, along with some motion graphics production. I attempt to play golf when I can, and when I get the chance do a bit of fly fishing. I also spend a lot of spare time tending my garden.

I play the flute and Irish whistles, and have developed over the years my own style. I like to marry traditional instrument playing with modern technology to produce a unique sound based on celtic music techniques.