

David King

 P E R S O N A L I N F O R M A T I O N

MARITAL STATUS: SINGLE
 NATIONALITY: BRITISH
 DATE OF BIRTH: 1/12/68
 PLACE OF BIRTH: CUCKFIELD, WEST SUSSEX.

 E D U C A T I O N

Downlands Comprehensive School Hassocks, West Sussex.	<i>Sep 1980 - July 1985</i>
Haywards Heath Sixth Form College Haywards Heath, West Sussex.	<i>Sep 1986 - July 1988</i>
Birmingham University Edgbaston, Birmingham, West Midlands.	<i>Sep 1988 - Dec 1988</i>

 S U M M A R Y O F Q U A L I F I C A T I O N S

Downlands Comprehensive School

'O' LEVEL IN 8 SUBJECTS:

PHYSICS, TECHNOLOGY, MATHEMATICS, TECHNICAL DRAWING, ENGLISH LANGUAGE, ENGLISH LITERATURE	GRADE A
CHEMISTRY, GEOGRAPHY	GRADE B

'A/O' LEVEL IN 1 SUBJECT:

ENGLISH FOR PROFESSIONAL AND BUSINESS USE	GRADE B
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Haywards Heath Sixth Form College

'A' LEVEL IN 3 SUBJECTS:

PHYSICS, TECHNOLOGY, MATHEMATICS	GRADE B C D
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Birmingham University

PHYSICS DEGREE COMMENCED, FROM WHICH I REGRETTABLY HAD TO WITHDRAW DUE TO ILLNESS.

T E C H N I C A L S U M M A R Y

My programming experience comprises Programmable Logic Controller (PLC) coding, realtime embedded microprocessor / microcontroller programming, processor level coding, Web development, PC desktop application programming, xBase programming, COBOL programming, and I am familiar with configuration management tools and development environments, and have user interface and graphic design skills.

My language skills comprise IEC1131-3 function block diagrams, statement text and ladder logic, C / C++ / C#, Assembler, ASP.NET, Java / JavaScript, Perl, XML / XSLT, HTML / DHTML, CSS, VB / VBA / Basic, Forth, PLM, dBase / Clipper, and COBOL.

PLC

TRICONEX IEC1131-3 FUNCTION BLOCK DIAGRAMS, STATEMENT TEXT
AND LADDER LOGIC
GE LOGICMASTER AND ABB AUGUST TRIGUARD LADDER LOGIC

Realtime embedded

MICROSOFT VISUAL C++ 7.0 FOR X86
BORLAND C++ 4.5 WITH PARADIGM EMBEDDED X86 LIBRARIES
ALTERA NIOS SOFT CORE CPU C COMPILER AND ASSEMBLER
DIAB C++ 4.1A / OSE RTOS FOR 68K
ADSP-2100 FAMILY C COMPILER (G21) AND ASSEMBLER
KEIL ELECTRONIK C51 / PLM51 / A51 / RTX-51 RTOS FOR 805X
COMSOL POLYFORTH / CHIPFORTH FOR X86 / 8051/32

Processor

x86 68K NIOS 805X/32 AT90SX 6502 Z80
ADSP21XX TMS320C2X

Web

C# / ASP.NET JAVA / JAVASCRIPT PERL XML / XSLT
HTML / DHTML CSS

Desktop

MICROSOFT DEVELOPER STUDIO 5.0
MICROSOFT VISUAL C++ 7.0 (32-BIT) / 1.52 (16-BIT)
BORLAND C++ BUILDER (32 / 16-BIT)
Targetting Win32 / 16 and MS-DOS with MFC / C++, and MS-DOS with C.
MICROSOFT VISUAL BASIC 6.0 (32-BIT) / 3.0 (16-BIT)
MICROSOFT VISUAL BASIC FOR APPLICATIONS (VBA)

MICROSOFT QBASIC / GW-BASIC
COMSOL POLYFORTH FOR MS-DOS / X86

xBase

BORLAND DBASE IV VERSION 2.0 AND CLIPPER 5.0

COBOL

MICRO FOCUS LPI ACUCOBOL FUJITSU DESKWARE COBOL 6.50

Configuration Management / Environments

MICROSOFT VISUAL SOURCESAFE / CONTINUUS CM / MKS RCS / PVCS
CODEWRIGHT 6.0

E M P L O Y M E N T H I S T O R Y

<p>Invensys Triconex Contract Crawley, West Sussex. SOFTWARE ENGINEER</p>	<p><i>June 2004 – date</i> <i>May 2002 - May 2004</i> <i>Oct 2001 - March 2002</i></p>
<p>Bio-Rad Microscience Contract Hemel Hempstead, Hertfordshire. FIRMWARE ENGINEER</p>	<p><i>Feb 2002 - May 2002</i></p>
<p>Solartron Analytical Contract Farnborough, Hampshire. DSP ENGINEER</p>	<p><i>Jan 2001 - Sep 2001</i></p>
<p>Philips Semiconductors Contract Southampton, Hampshire. SOFTWARE ENGINEER</p>	<p><i>July 2000 - Jan 2001</i></p>
<p>ABB August Permanent Crawley, West Sussex. SOFTWARE ENGINEER</p>	<p><i>July 1991 - April 2000</i></p>
<p>Silvertech Permanent Horsham, West Sussex. DESIGN ENGINEER</p>	<p><i>June 1989 - July 1991</i></p>

Invensys Triconex

My contract work with Invensys Triconex has most recently been Turbomachinery control projects for steam and gas turbines and motor drives, for compressors, pumps and generators. Control comprises speed and steam inlet and extraction pressure, compressor antisurge, and generator Automatic Voltage Regulation (AVR). Prior to this, I worked on Fire & Gas and Emergency Shutdown projects.

Control software is programmed using IEC1131-3 Function Block Diagrams, running on the *Tricon* and *Trident* triplicated fault-tolerant control systems.

Applications comprise power generation, boiler feedwater turbopumps, process gas compression, steam header pressure regulation, process recovery, pipeline pressurization, and LNG liquefaction.

I have also undertaken development of project autobuild, custom sequence of event recording, time synchronization, data capture and analysis, protocol conversion, and HMI development, in C++ and VBA.

Bio-Rad Microscience

My Bio-Rad Microscience contract was to design, code and document embedded C++ firmware for a project codenamed *Eagle Eye*.

The project is the development of a reduced cost laser scanning microscope, alternating settings and mechanisms including motorised emission filters within 30ms between a single laser source and photomultiplier tube.

The project included design of an object request broker, permitting arbitrary location of setting controls on any CANbus node within the microscope, and access to controls from any node. Also, a settings manager, which stores and alternately applies settings at 10Hz to distributed nodes.

For production, the firmware is being ported from an x86-platform to the NIOS configurable Soft Core CPU. Lastly, I ported the microscope scan generator from an x86 / ADSP2181 DSP platform to NIOS.

Solartron Analytical

My Solartron Analytical contract was primarily to write the DSP assembler firmware for an ADSP2181-based multichannel voltage acquisition card, being part of an industrial battery analysis instrument. The firmware performs asynchronous acquisition on dual voltage channels, performing continuous autoranging and on demand self test, including zero offset and calibration.

However, I also wrote DSP assembler for the ADSP2181-based main board and temperature acquisition and control board, and C++ on an OSE RTOS platform for the 68K-based marshalling board.

External to the instrument, I carried out development in Visual C++ on an ActiveX custom control, running on the PC, including a double buffered parser for the instrument data and command stream. I also enhanced the Visual Basic user application and development utilities, running on the PC.

In addition, I developed a Plug-and-Play VXD device driver in C++, for an embedded PC-based metal analysis instrument. A metal sample was ionised with an electric arc in argon, analysing the resulting spectrum with a CCD.

Philips Semiconductors

My contract with Philips Semiconductors was a realtime embedded role, providing software support for an IC codenamed *Lizard*, intended for use in Philips' next generation of consumer audio CD recorders. Lizard includes an 805x microcontroller (μ C) core.

The contract included writing a Hardware Abstraction Layer (HAL), software automatic gain control, and validation programs, running on the 805x, plus an I²C data transfer utility, and emulator scripts to assist testing, in C and Basic.

ABB August

ABB August (formerly August Systems) designed and assembled Fire & Gas, Emergency Shutdown, Process Control and Safety Systems, mainly for the Petrochemical Industry. ABB August developed their own Triple Modular Redundant (TMR) Process Control System (PCS). The PCS is a development of the US Space Shuttle landing computers.

At ABB August, I was initially responsible for the TRIDAS Display and Control System, which provided a graphical operator interface to the PCS. However, my main accomplishment was to design and program the process interface module subsystem of an enhanced TMR PCS. This comprised writing firmware running on three embedded 805x μ Cs on each field I/O module, and a supporting MS-DOS resource compiler, both in C. I also supervised contract programming staff working on the project.

The firmware is a monolithic, configurable operating system and application combination, with features including own implementation LZSS decompression, inter- μ C synchronization and voting, software I/O serialization, linear I/O interpolation, and continuous memory test, comprising ROM checksum and RAM address and data bus and cell test.

Silvertech

Like Invensys Triconex and ABB August, Silvertech designed and assembled Fire & Gas, Emergency Shutdown and Process Control Systems for the Petrochemical, Nuclear and Manufacturing Industries. However, Silvertech used commercially available GE-Fanuc and Allan Bradley PLC equipment.

Silvertech also adapted the GE ASCII / Basic interface module to run the polyFORTH implementation of the FORTH language. Lastly, Silvertech developed a range of microcontroller-based Fire and Gas modules, running chipFORTH. I worked on projects in each of these areas.

I N T E R E S T S

SAILING, MOUNTAIN BIKING, MOTOR RACING, WATERCOLOUR PAINTING,
CONSERVATION WORK WITH THE NATIONAL TRUST.