

Over twenty years in the IT industry developing a large range of skills in a broad range of fields that translates to:

- Time and Cost savings throughout the whole development process.
- Big Picture Thinking.
- Innovative solutions.
- High quality products.
- Market-appropriate products.
- An ability to deliver above expectations.
- *Whole view* approach generating the most elegant solution for the project.

Core Skills

- Able to quickly assimilate new computer concepts and applications.
- A passion for the Art, Science, and Technique of software development.
- High degree of Automation and Efficiency.
- High aptitude for problem solving.
- Able to communicate effectively with non computer literate people.
- Structured and efficient approach to software design and implementation.
- Strong systems analysis skills.
- Solid diagnostic skills.
- Structured test methodologies.
- Solid research ability.

I bring a committed and diligent approach to my work and have proven to be reliable, dependable, honest, and work with integrity.

Representative Achievements

- Smart Home system
- Medical Device Hub
- TCP/IP Stack for 16bit controller
- Multiprocessor Sterling Engine control system with PC Simulator and Monitor
- Linux Device drivers
- Kinetic Energy limited Automatic Door controller
- Real Time Kernel porting and application development

Career Highlights

1. Smart Home System (2006 to 2013)

A small start-up company had created a plan for a novel home automation system. The principle designer had generated the overview of the system but had left the company. I took this opportunity to re-engineer the implementation in a more elegant way.

The design utilized 32bit embedded arm micro-controller with touch screens, coupled by CAN bus to an embedded Linux supervisor. Other input and output modules were also designed and developed using the same core architecture.

The control system is an embedded system running Linux OS using a novel interpretive controller. Control modules and functions can be implemented using simple ASCII scripts.

Key Tasks

- Technical architect
- Lead software engineer
- Hardware design integrator
- Technical Consultant
- Oversee installation and testing

Technologies

- Embedded Linux
- 32Bit Arm micro-controller
- CAN bus
- RS232
- Ethernet
- Web service
- SQL and Embedded SQL.
- Streaming music and audio.
- SSH
- TCL Language.
- C Language.
- Shell scripting.
- Automation and Control.

Significant Achievements

- Software developed in less than 6 man months.
- Native high speed OLED screen driver.
- Proprietary efficient CAN bus protocol.
- Web configuration tool
- Remote monitoring and upgrade protocol.
- Significant cost savings by choosing open-source development tools.
- Highly configurable and adaptable TCL based control system.

2. Medical Device Hub Project (2008 to 2014)

A small start-up company had embarked on designing an embedded Linux control solution that ran into technical difficulties and I was asked to contribute to a new hardware design. This design used a cheaper and less complex architecture while still achieving all the feature requirements of the client.

The products purpose was to integrate the patient vital data that is collected via many disparate medical equipment and produce a standardized data output for a patient monitoring system. A key aspect of this system is that it must be reliable and operate 24/7 without user intervention.

Key Tasks

- Technical architect
- Lead software engineer
- Hardware design planning

Technologies

- 32Bit Arm micro-controller
- RS232
- TCP/IP Ethernet
- TCL Language
- C Language
- Assembly language
- Bare Metal

Significant Achievements

- Bare-metal Firmware to release in 5 weeks.
- Multiple Concurrent High speed RS232 interfaces
- TCP/IP Command line Interface for configuration and data export
- Dynamically loadable C-language driver modules
- A cost savings of 50% in Hardware BOM over original design
- Significant cost savings by using open-source development tools
- Innovative script based test and emulation system

Employment History

Self employed 1996 to present

Key Tasks:

- Design of software and electronic systems.
- Design of micro-controller systems.
- Infrastructure installation and setup.
- Consulting.

Significant Achievements:

- Smart Home System
- Medical Device Integrator
- Paging Electricity Controller
- Multiprocessor Sterling engine controller
- Kinetic Energy limited Automatic Door controller
- Machine Monitoring (SCADA) system.

Industrial Research Limited (DSIR) 1989 - 1996

Position: Programmer, Software consultant

Key Tasks:

- Design and implement software systems for research objectives and commercial clients.
- Provide consultancy services for commercial clients.
- Maintain in-house information systems.
- Assist in Network and Peripheral maintenance.

Significant Achievements:

- Jet Engine condition monitoring system using Paradox.
- Production tracking system using FoxPro.
- Machine condition monitoring software system in Quick-Basic, also an updated version in Paradox.
- In-house Time and cost tracking system in Foxpro.
- Energy auditing system using 4th Dimension (Macintosh).
- Radio Telemetry interface for Programmable logic controllers (PLC).
- Automated Fish Fillet processing.
- Internal Auditing of Teams to ISO9000.

Educational Background

Tertiary Three years at Auckland Technical Institute, gaining New Zealand Certificate in Computer Technology.

Secondary Four years at Otamatea High school, gaining University Entrance Accredited.

Referees

<i>Name</i>	<i>Phone</i>	<i>Type</i>
David Patterson	021 2409194	Personal
Lincoln Frost	03 332-8702	Business

<i>Name</i>	<i>Phone</i>	<i>Type</i>
Andrew Malcourne	021 0292 8686	Business
Alain Wenckebach	021 0262 6341	Business

Experience Summary

Language

- C/ C++
- TCL
- bash
- Assembly
- ASM/11
- HTML
- OpenGL
- PHP
- Python
- PostgreSQL
- SQLite
- MySQL
- Xbase
- Javascript

Tools

- GCC
- Eclipse
- Binutils
- Git
- Rational Robot
- Visual Basic
- Visual Studio
- PCB CAD
- Solvers
- Statistical
- Expert Systems
- 3D renderers
- Automation

Operating Systems

- Linux
- RT11
- TSX/+
- UnixS5
- RTEMS
- FreeRTOS
- OpenBSD
- Windows
- Plan9
- Inferno

Platforms

- PC
- PC014
- STM32
- PIC 18
- 8051
- H8S/300
- AVR
- ARM 9/11/A9
- Cortex M3/M4
- PDP 11/73
- MIPS/32R
- Beaglebone

Protocols

- USB
- TCP/IP
- RS232
- RS422/485
- CAN
- SPI
- I2C
- Ethernet
- MAP27