

OBJECTIVE:

Leveraging my broad background in hardware and software design in a high-tech, challenging environment where quality is the highest priority.

PROFESSIONAL SUMMARY

Electronics: BSEE, MSEE, 4 yrs digital design, 10 yrs analysis, PCB layout, testing/debug, EMI/EMC, 8 .. 32-bit μ Processors, CPLDs, control loops, ultrasound imaging

Software: 10 yrs C++, C-sharp, Visual Basic, Delphi, assembler for x86, PowerPC, DSP; Windows, WindowsCE, RTOS; D-COM, ActiveX, STL, ODBC, SQL, MFC

Management: Project Management 10 yrs, Software department 7 yrs, IT Department 5 yrs

Documentation: Authored all project documentation from proposals, hardware and software specifications, Hazard analysis, FMEA to Test specifications

PROFESSIONAL EXPERIENCE

4/04 – Present **Kestrel Labs** *Software Engineer*

Software to support research & development for several pulse oximetry projects. Software includes embedded-C as well as C-sharp programs for processing and recording data in real time. Processors include floating point DSPs and ARM-7 controllers.

8/03 – Present **E and S Design** *Consulting Software Engineer*

Develop software for medical products. Projects have included embedded code for an eye-scanning machine and data monitoring and recording software on a PC for a prototype surgical monitor.

8/94 – 8/03 **Evergreen Research, Inc.** *Director Software Development / Director Information Systems*

As a partner in this small consulting firm performed project management, system architecture, software and hardware design, along with managing the software department (up to 6 programmers) and IT department (4 servers, 30 workstations). See attached project descriptions for examples of projects I participated in.

8/92 – 4/94 **University of Florida – Department of Anesthesiology** *Research Assistant*

Designed and built a system that displays running costs of anesthesia intra-operatively, involving gas flow modeling, ergonomics, database-management and development of a Windows based user interface.

2/89 - 12/89 **Philips I&E – Breda, the Netherlands** *Electronic Engineer*

Designed and built a long-range intercom system using state-of-the-art technology like ISDN data transmission and CODEC audio compression techniques. Work entailed system design, electronic circuit design, testing, documenting and supervision of five technicians.

EDUCATION

- 9/89 - 4/94 **M.S. Electrical Engineering** at Eindhoven University of Technology, The Netherlands
Specialization: Medical Electrical Engineering; top 5% in class
- 9/84 - 8/89 **B.S. Electrical Engineering** at HTS Dordrecht, The Netherlands.
Specialization: Information technology.

PERSONAL

Born 12 May 1967 in Dordrecht, The Netherlands. Have U.S. citizenship.

PROJECT DESCRIPTIONS

Biometry / Pachymetry eye measurement device

Project Manager, Software Lead, Hardware Lead.

This ultrasound optometry device measures eye dimensions down to 1 micron.

- Designed single-board solution including Motorola PowerPC core, analog front-end, graphic printer controller, LCD backlight inverter, Ethernet, USB, PC card, TV / Video output, sound, touch-screen, I²C EEPROM, SDRAM, Flash program memory
- Ported Windows CE kernel to Motorola PowerPC, created custom drivers.
- Managed PCB layout effort to pass EMI / EMC test specifications
- Managed Application software development

Result: Product is most accurate device in its market today.

Computerized Perfusion Controller (Heart - Lung Machine)

Software Lead

An embedded PC based system for control and monitoring of pumps and sensors during extra-corporeal bypass perfusion procedures.

- Developed Software Requirements Specification, Software Design Description
- Performed Hazard analysis
- Designed touch-screen based user interface

Result: project was terminated because the client company was acquired by competitor

Automated Manufacturing test system

Project Manager, System Architect, Programmer

This system for burn-in testing surgical generators is comprised of 15 test stations controlled by a PC via a proprietary RS-485 network. The modular design is adaptable to new devices, suitable for burn-in testing as well as embedded software verification testing. Test protocols can be coded in VB script or Java; Since the protocols are interpreted at run-time the test system itself can be validated independently, avoiding re-validation for every protocol change.

- PC software design uses VB for the user interface and C++ ActiveX modules and DCOM. Entire test system can be run and monitored remotely through LAN
- Proprietary RS-485 communication protocol requires only simple 8-bit micro-controllers in test stations

Result: System is currently in use for production as well as engineering support

Calculation Engine for Total Parenteral Nutrition prescriptions

Project Manager, System Architect, Programmer

This software component computes the formula for a TPN based on clinically expressed inputs. It provides unit conversions, calorie and ion balancing and rule checking. It produces a Bill of Materials for an automated TPN compounding, and summary nutrition information, administration rate and volume information for the order.

- ActiveX COM component developed in C++ and STL, UI in VB and Borland Delphi

- Database design; SQL statements and stored procedures; ActiveX help file integration

Result: This software component is currently marketed, and it is used by the proprietor as the basis of a new pharmacy order entry system.

Stem cell Culturing System

Project Manager, System Architect, Programmer

The AastromReplicell™ System is a human cell production system providing GMP-compliant manufacturing and automated process control for the commercial-scale production of cells to be used in medical practice.

- Gas mixing control, fluid control, motion control, temperature control, control & monitor separation, real-time proprietary OS, medical record keeping facility; C++ / x86 assembly code
- Proprietary redundant RS-485 network

Result: System was successfully brought to market