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November 19, 2003

To Whom It May Concern:

As a consulting systems engineer, I architect, implement, and optimize aerospace, automotive, industrial, medical, and communications systems that require predictable response behavior. I can assist you in business planning, process design, systems engineering, platform selection, software design, software implementation, quality assurance, maintenance, and product marketing.

The services I offer—and the skills I bring to the table—all relate to designing and implementing software systems correctly, in optimal time, on the first attempt. These skills and services also relate to implementing systems which are highly reliable and therefore minimize maintenance and litigation expenses. Surely, you would agree that services such as mine can directly benefit your business.

I would like to assist you; I am available for most forms of work arrangements: I will work with you as your consultant or as your employee, part or full time, and either on or off site. Should your business require frequent travel, I can arrange to travel on short notice.

Prior to founding Predictable Response Consulting, I was Senior Engineer at QNX Software Systems Inc where I architected highly available systems, developed network protocol software, and performed technical marketing and sales support. Before that, I was Senior Systems Engineer at TimeSys Corporation where I developed Rate Monotonic scheduling code for the Linux kernel and performed technical marketing and sales support. Before that, I was a Member of Technical Staff Operating Systems Engineer at Lucent Technologies Bell Laboratories where I spent twelve years writing Unix-variant operating system code for telecommunication switches.

For your review, I have enclosed a resume and several answers to typical interviewers' questions. These should assist you in assessing my skills and my character. Because you can best determine a person's character from the judgment of their peers I strongly encourage you to contact my references: I am well respected and liked by all my clients, employers, and peers. I welcome your call to discuss your needs.

Sincerely,

Lonnie L. VanZandt

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Consulting Systems Engineer

Skilled software developer and systems engineer with broad experience across the systems development lifecycle who is focused on the implementation of complex systems having real-time, embedded, and safety-critical constraints and who seeks challenging roles designing systems and communicating ideas to others.

Keywords

Systems Engineering, Requirements Management, DOORS, Object Oriented Analysis, Economic Analysis, Rate Monotonic Analysis, TimeWiz, UML, Database Schema Design, Design Patterns, High Availability, Finite State Machines, Control System Design, Development, Real-time & embedded Systems Development, Kernel Development, Unix SVR4, LynxOS, Linux, eCOS, QNX, Object Oriented Analysis and Design, Programming, Ada, C, C++, Java, Real-time Java, ObjectPascal, POSIX APIs, Multi-threading POSIX threads, Symmetric Multi-processing, Dataflow Design, LabView, SCADE; Scripting, Shell, HTML, CGI, Perl, PHP, Tcl/Tk, Python, Database Development, Schema, SQL, MySQL, Postgres, Microsoft Access, ADO, dBase, Delphi, Distributed Design, Socket Programming, CORBA, TCP/IP, Compilation, GNU Compilers, Visual Studio, GNU Make, CVS, RCS, GUI Design, Visual Basic, JBuilder, Qt, Hardware Integration, Data Acquisition, Board Support Packages, Device Driver Development, DMA, Disk, Flash, NIC, ARM, Intel x86, MIPS, Network Processor Units, PowerPC, PCI, Hotswap CompactPCI, VME, BSD 4.4, TCP/IP, Sockets, OSPF, Cisco IOS, Linux Routing, ZebOS, NetPLANE LEAP, Adtech Test Equipment, Ethereal, PhNetProbe, DNS Configuration, Samba/CIFS Configuration, NPU Integration, Sonet/SDH, MPLS, Financial Documents, Business Plans, ISO 9000 Process Methodology and Certification, Total Quality Management, Accounting, Quicken QuickBooks, Microsoft Project, Microsoft Access, Microsoft Excel, Engineering Lead, Trainer. Marketing, Sales, Public Speaking, Competitive Analysis, Copywriting, Journalism, Web Design, RFPs, Microsoft Word, FrameMaker, Microsoft PowerPoint, Dreamweaver, Microsoft FrontPage, Microsoft Publisher, French Language, Change Management, BitKeeper, ClearCase, CVS, RCS, Total Quality Management, ISO 9000 Process and Certifications, DO178B RUP, Process, Performance Tools, Applied CodeTest, Linux Trace Toolkit, VxWorks Windview, QNX System Analysis Toolkit; Ethernet Packet Sniffers, Ethereal, PhNetProbe, Sniffer.

Skills Assessment

Programming Languages, Expert, More than 10 Years

Ada, C, C++, Java, Pascal, Visual Basic, .NET, SQL, Perl, PHP, Tcl/Tk, Shell, Lustre

Real-time and Embedded Systems, Expert, More than 10 Years

Device Drivers, RTOS design, RMA Schedulability, Finite State Machines, Data Acquisition

Object Oriented Analysis and Design, Advanced, More than 10 Years

UML, OO Trainer, C++, Systems Engineering, Design Patterns

Database Design, Advanced, More than 10 Years

Normalization, ER, Schema Design, SQL, ADO, Replication

Hardware/Software Integration, Intermediate, More than 10 Years

PowerPC, Pentium, MIPS, Network Processors, ARM, PCI, CompactPCI, VME, Device drivers, BSPs

Networked Systems, Intermediate, More than 10 Years

TCP/IP Internals, Routing, OSPF, Packet Sniffers, Adtech Equipment, SDH/Sonet, NPUs

Performance Analysis, Intermediate, More than 10 Years

GNU Debuggers, CodeTest, Linux Trace Toolkit, Windview, QNX System Analysis

Control Systems, Novice, 1 to 2 Years

PID Design, Labview, SCADE

Change Management, Advanced, More than 10 Years

RCS, CVS, ClearCase, BitKeeper, ISO 9000, DO-178

Quality Management, Advanced, More than 10 Years

ISO 9000, DO-178B, TQM, Process Engineering

Marketing, Intermediate, 5 to 6 Years

Public speaking, Competitive analysis, Technical writing, Copywriting, PowerPoint, Dreamweaver, French

Business Management, Intermediate, More than 10 Years

Financial Analysis, Business Plans, Accounting, QuickBooks, Microsoft Project, Trainer

Work History

Consulting Systems Engineer, Founder, Predictable Response Consulting

Location: Evergreen, CO US

01/2002 to Present

As consulting systems engineer, I architect, implement, and optimize systems that require predictable response behavior in the fields of aerospace, automotive, industrial, medical, and communications. This includes business planning, process design, systems engineering, platform selection, software design, software implementation, quality assurance, maintenance, and product marketing.

Software Engineer, Aztek Engineering

Location: Boulder, CO US

07/2003 to 12/2003

GR-303 Call Processing software design and implementation. Provided UML modeling of call-processing and processor redundancy requirements and implementation of C++ code from said models to eCOS on PowerPC 8260 hardware.

Senior Real-time Consulting Engineer, Artisan Software Tools

Location: Evergreen, CO US

08/2002 to 12/2002

Provided pre-sales support and post-sales training and custom engineering on Artisan Software Real-time Studio, a UML modeling and code generation development environment for Systems Engineers designing embedded systems. Presented and wrote technical marketing material to prospective customers in the aerospace industry, for trade journals, and to public seminars.

Senior Engineer, QNX Software Systems Ltd

Location: Denver, CO US

04/2001 to 02/2002

Performance analyzed QNX 6.2's NetBSD 4.4 IPv6 stack and related NIC device drivers. Implemented a ZebOS OSPF gateway router on a dual PowerPC SMP platform. Performed competitive analysis of operating systems from Wind River, Enea, Green Hills, TimeSys, Monte Vista, and Caldera. Presented and wrote technical marketing material to prospective telecommunications and networking customers, for trade journals, and to public seminars. Provided technical pre-sales support on QNX architecture, POSIX systems, High Availability architecture, symmetric multiprocessing, and Network Processor with RTOS integration.

Senior Systems Engineer, TimeSys Corporation

Location: Denver, CO US

06/2000 to 04/2001

Optimized Linux 2.2 and 2.4 kernels for real-time response through the inclusion of admission control and RMA scheduling. Analyzed performance of various Linux device drivers using the Linux Trace Toolkit. Architected a highly

available Linux that integrated kernel device drivers and CompactPCI hotswap hardware with GoAhead SelfReliant Availability Management middleware. Presented and wrote technical marketing material to prospective RTOS customers, trade journals, and to public seminars. Provided technical pre-sales support on TimeSys Linux/RT architecture and on real-time issues such as RMA scheduling, RTOS kernel design, high-availability systems, and Internet Quality of Service.

Member of Technical Staff, Lucent Technologies Bell Laboratories

Location: Denver, CO US

04/1994 to 06/2000

As a lead engineer, architected, designed, documented, and implemented LynxOS-based, failover management software for highly-available, VME PowerPC750, main controllers in an SDH digital access cross connect switch. Wrote the real-time device drivers and the multi-threaded, distributed, state machine responsible for performing failover management. Wrote analysis and design documentation with OOA, OOD, and UML practices. Developed and diagnosed LynxOS kernel software. Led the replacement of proprietary, MIPS R3000 controller equipment with PowerPC 750 VME equipment. As a team leader and liaison to suppliers, wrote RFPs for equipment and software vendors. As a build manager, implemented an RCS and a CVS change management system and integrated these into Lucent's ISO 9000 process. As a process engineer, implemented development methodologies and led the team to successful, repeated ISO9001 certification. Performed software build and integration tasks with GNU compilation tools for a 10-member kernel development team. Performed quality assurance testing using protocol analyzers, logic analyzers, software analyzers, and GNU debuggers on Lucent's SDH switch.

Member of Technical Staff, AT&T Bell Laboratories

Location: Naperville, IL US

04/1988 to 04/1994

As a lead engineer, maintained a proprietary, real-time operating system on a Digital Services Circuit pack in the International 5ESS switch. Wrote analysis and design documentation with OOA, OOD, and UML practices. As a process engineer, implemented development methodologies and led the team to successful ISO9001 certification. Wrote OS and DSP code, in C, for call-progress applications and the CallerID service. Wrote Unix SVR4 device drivers. Performed quality assurance testing using signal analyzers, logic analyzers, traffic simulators, and GNU debuggers on 5ESS software.

Application Programmer, Wordlink

Location: Champaign, IL US

01/1986 to 04/1988

Performed technical sales support for an Ethernet equipment vendor. Architected and developed commercial business applications using dBase and Clipper. Wrote Request For Proposal replies. Troubleshoot 3COM Ethernet LAN installations.

Education

Fundamentals of mathematics, physics, chemistry, electrical engineering, and computer science. Advanced studies in computer engineering including compiler construction, database design, and computer graphics. Independent studies in electrical engineering and control systems.

Bachelor Degree, University of Illinois
Major: Computer Engineering
Minor: Finance
08/1983 to 05/1985
GPA Overall: 4.5

Master Degree, University of Illinois
Major: Computer Engineering
08/1985 to 05/1987
GPA Overall: 4.5

Affiliations

IEEE Computer, Communications, and Reliability Societies, Secretary of Colorado Chapter INCOSE (International Council on Systems Engineering), National Instruments' Alliance Program.

Publications

Articles in Communications Systems Design, Embedded Systems Programming, Electronic Design, Enterprise Linux Journal, and VME Solutions. Technical marketing material for various companies. Samples available at <http://www.predictableresponse.com/assets.php>

Personal References

Ernie Frey, Emulex
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Complete and Validated SF-86
Available on Request

Questions & Answers

Describe a professional skill you have developed in your most recent job.

A recent and current client of mine, Esterel Technologies, for whom I provide technical pre-sales services, introduced me to the use of formal languages (specifically Esterel and Lustre) for the implementation of deterministic control systems.

Their product, SCADE Suite, is a product similar to the control systems toolbox of Matlab/Simulink but based on a formal, mathematical language and capable of producing DO-178B qualifiable C code. The benefits to a user are a dramatic reduction in design and verification costs in safety-critical systems.

Do you like working alone or in a team environment?

My preference for independent or collaborative work depends on the nature of the task at hand: for example, analyzing a system and clarifying its specification are tasks best performed amongst peers and subject matter experts while researching information and drafting code are ideal independent activities.

When appropriate, I collaborate with peers to consult with, advise, and train them. When appropriate, I filter distractions and focus on drafting a model, a document, or a code module.

Do you like working in large groups?

An ideal team consists of 3 to 9 experts; teams with too few individuals deadlock over personal opinions while those with too many members stagnate due to communication overhead.

At Bell Laboratories, I once was a member of a team of more than 50 engineers who met 3 times a week to review over 300 pages of technical documentation. The situation was farcical, nothing meaningful was accomplished.

Everyone has a favorite class in college. What was yours?

Complex Analysis—because it provides a unification of the various domain-specific branches of mathematics. Unfortunately, each engineering discipline often uses its own mathematical terminology and techniques. Complex analysis reveals the wonderful commonality of trigonometry, physics, electrical engineering, signal processing, transfer functions, and more.

How can you help our company be more profitable?

The services I offer - and the skills I bring to the table - all relate to designing and implementing software systems correctly, in optimal time, on the first attempt. These skills and services also relate to implementing systems which are highly reliable and therefore minimize maintenance costs and litigation expenses. Clearly, these benefits directly improve your bottom line.

How do you measure the success of your work?

My success is contingent on your success: if I deliver a solution which meets your functional requirements, your schedule constraints, and your cost constraints, then I have succeeded. I gauge your satisfaction with my work through ongoing conversation with you to assess progress towards our negotiated requirements, schedules, and constraints. If, in the process of satisfying my clients, I happen to learn new concepts and improved methods, then I am doubly pleased.

How do you usually handle criticism?

I thrive on constructive criticism and strive to adjust my behavior and deliverables to satisfy my clients, peers, and supervisors. I attempt to handle deconstructive feedback by talking privately with the individual(s) who feel so wronged that they have become spiteful. (This, by the way, has rarely happened to me in my career.) If this fails, I bring the matter up discreetly with those with authority above all affected parties.

How would you rate your communication skills?

I rate my communications skills as excellent. I encourage you to review a portfolio of my published work at my consultancy's site. I am also comfortable performing public presentations - and have received positive feedback from my audiences on my ability to communicate technical concepts clearly.

Is there anything you would change about your college education?

A historical division exists between mechanical and computer engineering. This is unfortunate because understanding Control Systems (and really the engineering of systems) is increasingly a skill much needed amongst software engineers as "control" becomes less of a mechanical process and more of an electronic and computational process. Therefore, if I could repeat my college education, I would augment the classical electrical and computer engineering classes with classes in mechanical engineering, control systems, and systems engineering.

Tell me how you would handle multiple projects in the job.

I perform admission control, prioritization, and scheduling to multi-task my time between various clients and within individual projects. That is, I prefer to draft a timeline schedule (typically MS Project) for significant tasks and to prioritize the various tasks so that I know which ones have slack and can tolerate delay. Then, I only accept new tasks when I am reasonably certain that I can complete them without jeopardizing in progress tasks.

When a situation cannot afford the luxury of the above formalism, I cautiously address crises and keep my clients and supervisors apprised of the unexpected interruptions so that they are not surprised by delivery delays.

What makes you unique and why should we hire you over any of our other candidates?

I can assist you as can few other engineers because I have experience across the software lifecycle and have the rare ability amongst engineers to excel at presenting, orally and textually, technical ideas.

Many an engineer may be able to exploit the intricate capabilities of a particular technology or tool. Most, however, lack the abilities to incorporate such niche expertise into a practical software lifecycle and to share the benefits of their expert understanding amongst a project's stakeholders. This I can and have done.

I am also well liked and respected by my clients, employers, and peers. I am of good character and am never the source of unpleasant interpersonal issues.

What new skills or ideas do you bring to the job that other candidates aren't likely to offer?

The "engineering" in software engineering.

Software systems should and can be predictable; achieving this requires formal, analytical tools, languages, and thinking. There are far too many folk who are simply programmers that simply implement complex systems in convoluted, stream-of-consciousness, rambling, arcane code languages.

The fact that useful systems occasionally spring forth from these folk is impressive - but predictable systems demand true engineering and not artistic crafting.

What one word best describes you?

Predictable.

What would your colleagues tell me about your attention to detail?

They would say that I am meticulous and punctual without being an annoying, tardy perfectionist or idealist.

Why did you leave your last job?

Each employment transition has been the result of either successful completion of the project or the result of downsizing due to poor economic conditions. All of my former clients and employers have remarked that they would retain or hire me anew if economic conditions permitted doing so.

Why have you held so many jobs in recent times?

As a consultant, I hope to have numerous jobs in short intervals because this indicates that I am successful in establishing a customer base. That said, recent poor economic conditions have forced several of my recent employers and clients to release even their exemplary staff and consultants.