Are you looking for someone who is both an experienced real-time systems engineer & software engineer, who also specializes in Software Systems Requirements Engineering, Software Systems Architectural Design and Simulation Development as well the application of new processes, new methods, and new technologies to the system development environment within your organization?

Perhaps this is the resume you've been looking for . . .

Kent D. Palmer, Ph.D.

http://kent.palmer.name

Systems Engineer, Software Engineer & Technologist

"My objective is to find a position of responsibility implementing new technologies within the system engineering and software engineering development process, then to use these technologies to increase productivity and improve system and software quality. The proper use of tools in the development of real-time systems requires a knowledge of process, methods, standards, and metrics, combined with development experience. I have a broad range of experience to offer any engineering organization interested in enhancing its real-time embedded technology capability as a way to increase its competitiveness."

BACKGROUND:

Current Status Unemployed

Major Aerospace Company – February 2005 to December 2010
Principle Systems Engineer
Most recent assignment:
Requirements and Verification Systems Engineer
Authoring Requirements Verification Reports
Setting up DOORS for Requirements Tractability
Setting up an Information Consolidation (Wiki) System for Operations Support
Performing Requirements Analysis and Tracing
Performing Requirements Change Management
Attended high level Program Management Reviews to monitor change impacts

IR&D on Domain Engineering and Model Based Systems Engineering implementing the infrastructure for a proposal and design center

Systems Engineering Process Lead

- **Improved SE Processes bringing them up to CMMI level 3 maturity confirmed twice by SCAMPI appraisals**
- **CMMI SCAMPI Appraiser for SE, HW, and SW technical process areas**
- **Organized and validated evidence to achieve CMMI Maturity Level Three in SE, HW, and SW**
- **Representative for Systems Engineering on Enterprise Process Group**
- **Representative for Systems Engineering on Division Systems Engineering Advisory Group**
- **Lead on AS9100 (ISO) Audit Preparation**
- **Interface for QA audits of SE Processes**
- **Interfaced with programs on process issues**
- **Gave Training on Systems Processes to Systems Engineers**
- **Reworked Division processes and implemented process changes to align with business**

Second Ph.D. 2009 in Systems Engineering at the Defence[i] and Systems Institute (DASI) program at the University of South Australia; Thesis title: Emergent Design.
http://arrow.unisa.edu.au:8081/1959.8/74458 See also http://emergentdesign.net

Published:

"An Application to Systems Engineering of a Framework of General Schemas Theory" CSER 2005
"Exploring Intelligent Enterprise System Limitations" INCOSE 2007
"The Evolving Joint Perspective and Meta-systems Theory: A Case Study based on the Joint Vision Document" INCOSE 2007
"Emergence and Complexity in relation to General Schemas Theory" CSER 2008
"The Failure of Systems Engineering as an approach toward Complex Adaptive Systems in our major Customer's Eyes: Analysis of the Capstone Concept for Joint Operations and its relation to Meta-systems Theory" CSER 2008
"Self-* Systems and Special Systems Theory" LA INCOSE MiniConference 2009
"Systems Radio Podcast Launch" LA INCOSE MiniConference 2010

Written:

"Autonomic Computing and Special Systems Theory"
"Ontological and Knowledge Emergent Engineering of Systems and Meta-systems based on General Schemas Theory"
"Radical Knowledge Discovery and Emergence"
"The Ontology of Design"
"A Critique of SysML from the point of view of General Schemas Theory"

Raytheon -- June 1999 to February 2005

Principle Systems Engineer

Most recent assignment:

Systems Engineer for Radio Networks

Proposal

IMS development, Risks and Assumptions, Software Thinspecs,
WBS and Scope Documents, interface with Supply Chain Management

Radio Network Host Development Manual Update

Systems Engineering Process Improvement at CMMI Level 3 moving toward CMMI Level 5

Systems Engineering Process Development and Deployment
Project Systems Proposal Activities,

Systems and Software Engineering Process Appraisal based on CMMI

(helped attain SE Level 3, two practices short of SE CMMI Level 5, December 2003)

Six Sigma Certified Specialist
Systems Engineering and Software Engineering

Process Improvement
Project Reporting Improvement
Process Guidelines development
Process Liaison with Projects
Methods Consulting
Process Architecture Development
Process Directive Development

Trained CMMI Assessor
Trained Integrated Process Development System Deployment Specialist
Integration of Software and Systems Engineering Processes for OPF, OPD, OID
(Helped attain Level 5 in SW CMMI, December 2003)
Coordination with Program Management concerning SE ROM bids and SE proposals
***Systems of Systems* Methods and Process Research**

Developed and delivered a course on: Software Requirements and Architectural Design Methodologies at the local University of California Irvine Extension (Fall 1999)

Published:
"Meta-systems Engineering" INCOSE 2000
Also several papers on Meta-Systems Theory at ISSS 2000
"Anti-Terror Meta-systems Engineering" INCOSE 2002
"General Schemas Theory" CSER 2004

For these and other papers see http://archonic.net

Boeing -- September 1985 to June 1999

Software Engineer and part time Systems Engineer
Specializing in Real-time Embedded System Design & Ada/C Implementation
Focused on Architectural Design, Software Requirements, and also Simulation development

Last Major assignment:
Team Leader for both Systems and Software Requirements as well as Software Architectural Design, and then Software Developer for Detailed Design, Code, and Test on a Satellite Sensor Payload System

Other areas of competence . . .
Software Project Team Leader
Architectural Designer using Real-time and Object Oriented Methodologies for Software Engineering
Requirements Analyst for both System level and Software level requirements
Object-oriented Simulation Design & Implementation
Practitioner using Formal Requirements Methods for Systems and Software Engineering
Software Process and Systems Process Consultant and Technologist
Design Methodology Research and Tool Development
Formal Requirements Methods Research and Technology Transfer
Human Interface Software Design & Prototyping
Former Software Engineering Process Group Chairman, Process Assessor and Change Agent
Lead in Software and Systems Engineering Process, Methods, and Tools development and implementation
Technology Transfer Specialist

PREVIOUS EXPERIENCE:

Creative Micro Systems -- February 1984 to June 85
Computer Manufacturer
Lead Real-time Software Engineer / Project Manager
Principal designer on a 12,000-line real-time system written in Assembly code.

ATV Systems -- January 1983 to January 84
Computer Manufacturer of Restaurant Point-of-Sale
and Hotel Front-Desk Systems
Systems Analyst
New product development for hospital industry.

Word Management Systems -- 1979 to 81
Word Processing Bureau -- Norwich, England
Managing Partner (Part-time student)

First Ph.D. 1982 in Sociology at the London School of Economics, University of London
Full-time graduate student -- 1973 to 1982
Ph.D. degree obtained 1982
Subject: Philosophy of Science
Dissertation Title:

The Structure of Theoretical Systems in Relation to Emergence.

Dissertation analyzed the impact of new things coming into existence on the structure of scientific theories.

University of Kansas -- 1969 to 73
Full-time undergraduate student

ESSENTIAL SKILLS:

- ❖ Requirements and Verification Systems Engineer
- ❖ Real-time embedded software systems design, prototyping, and implementation.
- ❖ Object-oriented simulation design and development.
- ❖ Software and systems engineering process definition.
- ❖ Engineering-wide work process architecture development.
- ❖ Research into Systems Engineering and Software Engineering Processes, Methods, and Tools.
- ❖ Research into Formal Requirements Methods
- ❖ Research into Domain Engineering and Model Based Systems Engineering
- ❖ Research into Design Methodologies
- ❖ Project planning and project leadership.
- ❖ Development of software engineering technology applications such as CASE tool design and prototyping and environmental integration.
- ❖ Trained at Software Engineering Institute, Pittsburg, PA to perform appraisals of software development process execution.
- ❖ Performed audits of division Systems, Hardware and Software process using Capability Maturity Model Integrated (CMMI) according to SEI SCAMPI assessment methodology.
- ❖ Performed audits of division Software process using Capability Maturity Model (CMM) according to SEI assessment methodology.

❖ Studies of methodological issues such as the application of the object-oriented methodology to the analysis and design of real-time systems.

❖ Studies of the application of Domain Specific Languages at the Systems Engineering level

❖ Development and maintenance of databases and models for productivity and quality analysis.

❖ Research into use of new technologies, technology infusion and transfer to early adopters.

❖ Principal evaluator for many engineering tools.

❖ Planning and execution of technology enhancement programs.

❖ Contact for technology transfer from aerospace consortia, e.g. SSCI, SEI, and SPIN.

EXPERIENCE:

SYSTEMS ENGINEERING:

❍ **Systems Engineering Requirements and Verification on Satellite program**
Requirements Change Management, Requirements Management in DOORS, Requirements Verification
Developed Wiki architecture to support operations ❑ Participated in Change over from Teamcenter (SLATE). to DOORS ❑ Integration of various databases into a central repository Merged various separate Change Management processes into a single unified process ❑ Audited Milestone Reviews to make sure that all the products that were to be complete were accounted for. ❑ Attended Program Management Meetings at all levels of the program. ❑ Analyzed Change Packages for correctness and cost impact ❑ Wrote Requirements Verification Reports. . ■

❍ **Systems Engineering IR&D on Satellite Ground Systems**
Developed Processes and Methods for Constellation Control Prototype Development.
Key development systems engineer working to integrate prototypes to produce ground system of the future. ❑ Worked with lead systems engineer to plan and implement coordination tasks. ❑ Coordinated the work of several systems engineers and various organizations to make the project come together. ❑ Worked with vendors closely and supervised their efforts. ❑ Produced novel approaches to the design task of the IR&D. ■

❍ **Systems Lead on Satellite Payload Processor**
Organized Systems Engineering effort on major project.
Collected issues and analyzed their project impact. ❑ Facilitated cross discipline resolution of issues on project. ❑ Advocated model building at Systems Engineering level. ❑ Brought focus to areas of concern. ❑ Forced changes in specifications in order to improve Systems Engineering discipline on the project. ■

❍ **Systems Engineering Process Development and Deployment**
Focal point for SE Process Maturity improvement.
Helped the SE process owner to develop a process improvement strategy and implement it within the organization. Assessment of SE Process using EIA 731. ❑ Six Sigma Baselining. ❑ SE project reporting improvement. ❑ Developed Process Guidelines. ❑ SE process intraweb Requirements and Design. ❑ Active Liaison with SE projects on process related issues. ❑ SE related Fact finding concerning effort and cost. ❑ Template development. ❑ Process Tailoring Checklist development. ❑ Example Discovery and diffusion of Best Practices. ❑ Process Architecture development. ■

❍ **Systems Process Methods and Tool Research**
Have been practicing Systems Engineering based on recent research into Systems Processes, Methods, and Tools attempting to put these improvements into practice by example use.
Solid Theoretical Background in Systems Theory ❑ Developed Systems Engineering Processes ❑ Research in Formal Requirements Methods at Science Center ❑ Focused on integrating Software and Systems Capabilities ❑ Applied Systems Engineering Processes and Methods to Research Prototypes under development. ■

SOFTWARE ENGINEERING:

❍ **Software Requirements, Architectural Design and Implementation of Satellite Sensor Payload System:**
System has two PowerPC processors and 40 C40 Digital Signal Processors and contains Five CSCIs.

Helped setup processes, methods and tools for project. ❑ Collected software requirements and wrote SRS. ❑ Produced Behavioral Model of system using Gurevich Abstract State Machines Method. ❑ Produced DARTS Tasking Architecture and wrote SDD. ❑ Produced ObjecTime model of application. ❑ Represented Software Team at Systems Engineering meetings. ❑ Coordinated with hardware designers. ❑ Supervised update and coordination of all Software Design models. ❑ Worked to apply latest technology, methods, and processes to project to achieve maximum efficiency ❑ Produced module designs ❑ Wrote and tested C code for a significant part of the payload system using VXworks Tornado. ■

❍ **Simulation Development:**

Knowledge of object-oriented discrete event and continuous system dynamic simulation systems.

Wrote simulation with dynamically programmable attributes that modeled multiple vehicle interaction scenarios. ❑ Simulation designed to drive multiple interactive console displays, keeping information coherent across operator positions. ❑ Simulator written in MODSIM object-oriented, graphical simulation language. ❑ Multiple simulation programs communicating through Unix sockets to user interfaces written in X Windows. ❑ Sensor subsystems emulated and vehicle design prototyped. ❑ Invocation of Object methods in another program across the network. ❑ Event management through global postoffice where objects register for events. ❑ Continuous simulation facilities built into discrete event simulator. ■

❍ **Implementation Experience:**

Industrial experience in higher level programming.

Designed and implemented Cache in Ada code for large Database project. ❑ Compared, selected and used Ada compiler and Run-time kernels. ❑ Wrote Ada tasking design descriptions. ❑ Retargeted C prototypes into Ada. ❑ Developed and implemented object-oriented designs using Ada. ❑ Familiarity with C++ and Java. ■

❍ **Human Interface Design:**

Skilled in use of User Interface Management Systems.

Created expert system user interface. ❑ Researched UIMS for real-time systems. ❑ Prototyped user interfaces in various languages. ❑ Developed layered display architecture. ❑ Designed object-oriented prototyping tool. ❑ Prototyped hypertext diagnostic system. ■

❍ **Software Reuse:**

Adept in Software Reuse Technology.

Developed software reuse plans. ❑ Performed Domain analysis. ❑ Set up reuse library. ❑ Researched design reuse methods. ❑ Developed feasible reuse process. ❑ Constructed reusable parts. ❑ Used SPC Synthesis methodology. ■

SOFTWARE TECHNOLOGY:

❍ Requirements Methods:

Research into Formal and Semi-formal Methods.

SPC CoRE, Software Cost Reduction, Parnas' Four Variable Method, Gurevich Abstract State Machine Method, N. Leveson's RSML, Statemate, SRI's Prototype Verification System, Z, VDM, RAISE ■

❍ **Real-time Design Methodologies:**

In-depth experience using many methods in design work.

Architectural and detailed software design. ❑ Programming-in-the-large and Information-hiding. ❑ Distributed & Tasking-communication design. ❑ Object-oriented & Functional design. ❑ Real-time Operating Systems. ■

Some specific methods: UML ■ Objectime/ROOM ■ Real-time Object Oriented Design Methods ■ SPC / Gomaa - ADARTS ■ Neilsen / Shumate - OOD/VLM ■ Constantine / Wasserman - OOSD ■ Shaler / Mellor - Object Oriented Analysis ■ Yourdon / DeMarco- Structured Analysis / Design ■ Hatley / Pirbhai real-time extensions ■ Ward / Mellor real-time extensions ■ Gutag / Liskov - Object Oriented Design ■ Entity-relationship modeling & temporal logic ■ Object Modeling Technique ■

❍ **Software Work Process Implementation:**

Put in place a complete software process for development.

Chairman of Division's Software Engineering Process Group (SEPG). ❑ Created conceptual framework for process improvement activities of the division. ❑ Defined and implemented software processes. ❑ Delineated Division's software procedures. ❑ Developed process and product metrics. ❑ Designed information collection methods. ❑ Assessed projects using SEI process Capability Maturity Model and questionnaire. ❑ Developed ADARTS based process for Design. ❑ Instituted use of Architectural Design Plans. ❑ Wrote Systems Engineering work process based on MIL-STD-499B. ■

❍ **Cost Estimation Parametrics:**

Estimated software size, effort & schedule for bids.

Built historical productivity database. ❑ Calibrated SOFTCOST model. ❑ Created custom in-house models based on regression and COCOMO parameters. ❑ Coordinated cost model comparisons. ❑ Applied models to make bids in proposal efforts. ❑ Created work breakdown structure models. ❑ Made cost and schedule estimates. ❑ Analyzed engineering bids, and compared them to model results to identify cost drivers. ■

❍ **Environment Building:**

Constructed a unified environment for development.

Evaluated Computer Aided Software Engineering tools. ❑ Integrated software design environment. ❑ Planned technological insertion of environmental capabilities. ❑ Trained Software Engineers on tools and methods, and developed associated documentation. ■

ARTICLES WRITTEN:

- ❑ See ***http://archonic.net*** and ***http://holonomic.net***
- ❑ "Integration of Methods in Software Architectural Design: Towards the definition of a Core Set of Real-time Design Methods"
  (SES II & CASE88)
- ❑ "Software Engineering Foundations: A Paradigm for Understanding Software Design Methods" (SES III)
  - ❑ Part 1: Software Ontology
  - ❑ Part 2: Software Systems Meta-methodology (SES IV)
  - ❑ Part 3: Integral Software Engineering Methodology (SES V)
- ❑ "The Future of Software Process" (SES V)
- ❑ "Software Engineering Design Methodologies and General Systems Theory"
  International Journal of General Systems - Vol. 24, No. 1-2, 1996, pp. 43-94
- ❑ "On the Social Construction of Emergent Worlds" Series of working papers.
- ❑ "Steps to the Threshold of the Social" (SES VI) Series of working papers.
- ❑ "Advanced Process Architectures" Tutorial SEPG National Convention 1995.
- ❑ "Meta-Systems Engineering" Tutorial for Principles Working Group INCOSE 1997.
- ❑ ″Reflexive Autopoietic Dissipative Special Systems Theory″ 1999.
- ❑ ″Meta-Systems Engineering″ INCOSE 2000
- ❑ ″Gurevich Abstract State Machines in Theory and Practice″ 2000.
- ❑ ″Anti-terror Meta-systems Engineering″ INCOSE 2002.
- ❑ ″Vajra Logic and Mathematical Meta-models for Meta-systems Engineering″ INCOSE 2002.
- ❑ ″Possible Grounds For A Reflexive Sociology″ 2003
- ❑ ″Working papers on the Foundations of Systems Engineering Methods″
- ❑ ″General Schemas Theory″ CSER 2004
- ❑ ″An Application to Systems Engineering of a Framework of General Schemas Theory″ CSER 2005
- ❑ ″Exploring Intelligent Enterprise System Limitations″ INCOSE 2007
- ❑ ″The Evolving Joint Perspective and Meta-systems Theory: A Case Study based on the Joint Vision Document″ INCOSE 2007
- ❑ ″Emergence and Complexity in relation to General Schemas Theory″ CSER 2008
- ❑ ″The Failure of Systems Engineering as an approach toward Complex Adaptive Systems in our major Customer's Eyes: Analysis of the Capstone Concept for Joint Operations and its relation to Meta-systems Theory″ CSER 2008
- ❑ ″Self-* Systems and Special Systems Theory″ LA INCOSE MiniConference 2009
- ❑ ″Systems Radio Podcast″ Launch LA INCOSE MiniConference 2010

Personal Data:

o U.S. Citizen.
o Will consider relocation.
o References will be supplied upon request.

Contact:

Kent D. Palmer

(714) 633-9508 voicemail
(714) 202-7149 cell via Google voice
kent@palmer.name

For further details see other versions of this resume at URL http://kent.palmer.name/

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[i] Australian Spelling