

**Profile:**

IT Architect and Project Manager experienced in the design, development, and deployment of complex, large-scale, scientific, commercial, and aerospace systems. Interested in developing new software systems that have the potential for national or international social, economic, or scientific impact.

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**Accomplishments and Capabilities:**

- Extensive experience leading highly-skilled technical groups in the development of computer systems utilizing a wide variety of complex computer and software technologies.
  - System and software development approach based on meeting organizational and user needs.
  - Able to communicate complex technical issues to non-technical groups by focusing on organizational impact of technology and essential capabilities rather than technical details.
  - Wrote successful NSF, USGS, and W.M. Keck Foundation proposals to fund system development.
  - Currently performing staffing, budgeting, tracking, and day-to-day management for projects with annual budgets greater than \$2M/year.
  - Led development and successful deployment of SCEC Community Modeling Environment and Caltech Earthquake Monitoring system.
  - Led, or contributed to the development of, several operational, demonstration, and prototype systems including Kaiser Permanente PDA-based Material Management System, Cysive Employee Information System, TRW Wireless Command and Control System, FAAD C2I, and CCPDS-R.
  - System and software development experience using both agile and formal development processes.
  - Experienced with current technologies including portals, server-side development, databases, web services, workflow technology, grid computing, distributed-object technology, and content management systems.
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**System Development and Technological Experience:**

<b>2002-present</b>	<b>SCEC Community Modeling Environment Distributed Computing System</b> Key Technologies: Scientific workflows, grid computing (Globus), High Performance Computing (HPC), digital library-based data management (Storage Resource Broker), portal development, Java, Python, MySQL, distributed object-oriented software design
<b>2001-2002</b>	<b>Kaiser Permanente Materiel Management System</b> Key Technologies: J2EE, IBM WebSphere development tools and application server, DB2, Wireless PDA, Web Services, Agile software development process
<b>2000-2001</b>	<b>Cysive Employee Information System</b> Key Technologies: JSP, J2EE, Windows 2000 server, Oracle 8i, Use Cases
<b>1993-2000</b>	<b>Caltech Seismological Earthquake Monitoring System</b> Key Technologies: Publish-subscribe real-time data processing architecture, Oracle, C++, Solaris
<b>1986-1993</b>	<b>TRW and Hughes Command and Control Systems</b> Key Technologies: Unix, C, C++, Oracle, network programming, formal aerospace system engineering and software development process, Object-oriented development in Ada
<b>1983-1986</b>	<b>Standard Communications Trunking Radios</b> Key Technologies: New product development, Motorola and E.F. Johnson Trunking radio messaging, communications firmware development

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**Work Experience:**

**Southern California Earthquake Center**  
**MIS Director - IT Architect**

**Los Angeles, CA**  
**2002 - present**

- Information Technology architect for several SCEC projects with responsibility for selecting technologies that provide required system capabilities and are sustainable and affordable. Developed the SCEC/CME scientific simulation system that includes portal-based access to a heterogeneous high performance computing environment.
- Project Manager for several SCEC projects with responsibility for staffing, budgeting, leading, and reporting on Project status and progress and ensuring the project developments meet organizational needs.

Philip J. Maechling

**Kaiser Permanente Medical Foundation**

**Lead Programmer/Analyst**

**Pasadena, CA**

**2001 - 2002**

- Lead developer on medical facility materiel management system. The system uses PDA's as user input devices, and a dynamic, web-based, J2EE architecture for information displays and system administration. The system was developed using an agile software development process (XP).

**Cysive, Inc. – Builders of E-Business Architecture**

**Sr. Software Engineer**

**Irvine, CA**

**2000 - 2001**

- Successfully designed, developed and deployed two, web-based, enterprise applications using Java 2, Java Server Pages (JSPs), Enterprise Java Beans (EJBs), and Oracle 8i on Windows 2000 Server that significantly improved Cysive's corporate personnel information handling and reporting processes.

**California Institute of Technology – Seismological Laboratory**

**Caltech/USGS TriNet System Development Coordinator**

**Pasadena, CA**

**1993 - 2000**

- Coordinated a team of engineers, scientists, and analysts from multiple agencies in the development of the Caltech/USGS element of TriNet, a state-of-the-art, real-time, earthquake monitoring system. This system is currently the primary earthquake monitoring system in southern California and parts of northern California.

**TRW, Inc – Systems Engineering and Development Division**

**Sr. Member of the Technical Staff – Software Engineer**

**Carson, CA**

**1990-1993**

- Wrote C language communications software that created interoperability between two Army command and control systems (FAAD C2I and MCS) over a secure Army wireless LAN. Supported existing, and attracted new, C2I business by demonstrating the FAAD C2I and MCS interoperability to Army customers, and at military trade shows. Received a TRW Outstanding Performer Award for my work.

**Hughes Aircraft Company – Ground Systems Group**

**Member of the Technical Staff II – Software Engineer**

**Fullerton, CA**

**1986-1990**

- Performed object-oriented, real-time, communications software design, development, and testing of an Army command and control system (FAAD C2I), in a formal, CMM level 2+ development group. Participated in the full system life cycle and received a Hughes Corporate Superior Performance Award for my work.

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#### **Selected Publications:**

Maechling P., E. Deelman, G. Mehta, R. Graves, L. Zhao, N. Gupta (2006) *SCEC CyberShake Workflows - Automating Probabilistic Seismic Hazard Analysis Calculations*, Chapter in *Workflows for eScience*, Springer 2007

Maechling, P., V. Gupta, N. Gupta, E. H. Field, D. Okaya, and T. H. Jordan (2005) *Seismic Hazard Analysis Using Distributed Computing in the SCEC Community Modeling Environment* *Seism. Res. Lett.* 76, 177-181

Maechling, P., H. Chalupsky, M. Dougherty, E. Deelman, Y. Gil, S. Gullapalli, V. Gupta, C. Kesselman, J. Kim, G. Mehta, B. Mendenhall, T. Russ, G. Singh, M. Spraragen, G. Staples, K. Vahi (2005) *Simplifying Construction of Complex Workflows for Non-Expert Users of the Southern California Earthquake Center Community Modeling Environment*, *ACM SIGMOD Special issue on Scientific Workflows*, Nov 2005

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#### **Vendor Certifications:**

Sun Certified Programmer for the Java 2 Platform, Standard Edition (2001)

Sun Certified Developer for the Java 2 Platform, Standard Edition (2001)

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#### **Select Activities, Honors, and Awards:**

National Science Foundation TeraGrid Science Advisory Board (2007-present)

National Science Foundation Cyberinfrastructure User Advisory Committee (2006-2007)

Network for Earthquake Engineering Simulations (NEES) IT Strategy Committee (2006-2007)

TRW Outstanding Performer Award (1991) – Systems Engineering and Development Division

Hughes Aircraft Corporate Superior Performance Award (1987) – Software Engineering Division

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#### **Professional Preparation:**

M.S. Computer Science in High Performance Computing (2008)

B.S. Applied Physics (1983)

A.S. Electronics Engineering Technology (1981)

University of Southern California

Xavier University

Cincinnati Technical College