Michael I Schwartz

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SUMMARY

Extensive hands-on experience in systems and software engineering with emphasis on development methods and tools, incorporating new technology, and mathematical techniques. Technical excellence in multi-language development, software concepts, design, and development.

Succeeded in both mission critical applications with severe time constraints and research and development projects with technology insertion goals.

Mentored many technical contributors, especially advanced developers and architects, to make their own contributions to these applications, and future applications.

Focus on team building, mentoring, current and emerging technology insertion, and new business opportunities.

CAPABILITIES AND ACHIEVEMENTS

Led system design, software design, and implementation teams in completing multiple successful projects. Succeeded in both mission critical applications with severe time constraints and research and development projects with technology insertion goals. Mentored technical contributors, especially advanced developers and architects, to make their own contributions to these applications, and future applications.

Expert consultant, mentor, and implementer for UNIX/Linux, C, C++, scripting languages, cloud and big data solutions. Conversant with Java, JavaScript, and multiple SCM solutions.

Designed and implemented software products and interfaces, and integrated hardware and software.

Experience ranges from systems and software concepts, to architecture, to detailed design, and to device driver implementation.

Designed and implemented technology transfer courses and products for Lockheed Martin projects, including applying object-oriented techniques, systems and software engineering techniques, and cloud computing.

Designed and taught graduate level courses in many computing-related topics for the University of Denver.

EMPLOYMENT OVERVIEW

Schwartz Computer Consulting Services
402 South Ivy St., Denver, Colorado 80224

1984 — Present
President of custom software and training firm.

University of Denver
2211 S. Josephine, Denver, Colorado, 80208

1988—Present

University College Instructor *(1984-present)*
Taught JavaScript, Distributed Computing (including Amazon Web Service-enabled applications), Java, XML Applications, Database (4-level series), C++ (2-level series), C, OOA/OOD, UNIX (including internals) courses. Both online and classroom teaching. Highly rated by students.

Also taught Software Engineering II for the University of Denver Computer Science Department Masters Program. Guest lecturer on the origins and development of cloud computing, and likely future trends. Participant and table discussion lead in the 2016 "Unconference".

Lockheed Martin
PO Box 179, Denver Colorado 80201

1981 — 2015 (retired)

Overview

In addition to the specific positions mentioned below, my Lockheed Martin career has been marked by a focus on innovation in integrating new technologies, as a chief scientist and a system and software architect. I have been a frequent participant in design adequacy assessments, and many other broad corporate initiatives that require someone who can communicate well, and is not afraid to take risks, overcome obstacles, and work across organizational boundaries and through organizational challenges. My work history has shown the results of a commitment to creating a technical path for career advancement and enabling it for others.

Lockheed Martin Fellow *(2008-2015),* Lockheed Martin Fellow Emeritus (*2016+*)

As a Lockheed Martin Fellow, I provided technical leadership to wide variety of new business pursuits, as well as mentoring and technical support to continuing projects. Areas of focus included cloud computing (IaaS and PaaS), "big data" infrastructure and analytics with Hadoop (map-reduce) and HBase applications, operating systems, multi-language and multi-vendor implementations, technology roadmaps, evolutionary roadmaps, innovation, and information management strategies, including information assurance. Also led in transitioning several programs to agile methodologies, including support for Orion making that transition. Work in these areas successfully aligned multiple-business area efforts and corporate investment strategy.

Information Systems Architecture Lead, Steering Committee Member, Council (2001-2015)

As a senior architecture consultant at Lockheed Martin, credentialed at the advanced level, I qualified, mentored, and credentialed senior systems and software architects and technical leads over many programs and business areas, including overseas locations. I credentialed well over 100 architects, led seminars, created courses, and actively guided discussions on architectural approaches and techniques.

Special Assignment: Applying Hadoop (Map-Reduce and HBase) Techniques to Space Telemetry(2012-2015)

Applied Hadoop and other big data technologies to improving integration, verification, and test environment for the NASA Orion Mulri-puepoaw Crew Vehicle development. Demonstrated through model, design, and implementation the expected improvements in telemetry analysis processes. Achieved a standard product that is moving to production across 3 business areas, 4 types of spacecraft through my mentees in this area.

Special Assignment: Geoscout-related New Business Opportunities (2008-2012)

Provided technical support, cloud computing strategy, and mentoring for Geoscout-related new business opportunities. This included successfully leading and delivering a research and development project on cloud computing from infrastructure provider as well as application provider perspectives to guide business approach with a Government customer.

Special Assignment: Integrated Mission Managment (2006, 2009-2012)

Provided technical leadership, mentoring, grow technical talent, and establish esprit-de-corps for the data storage integrated product team on Integrated Mission Management (iMM). Also provided consulting support to infrastructure and user interface product teams. Achieved the desired results for the team, and then continued mentoring the multi-contractor team to successfully deliver on their commitments.

Proposals and Reviews
Proposal volume lead, technical lead, and lead review included major proposals for multiple customers through multiple business areas: RTM 3.2 (2012), ROMO (2011), JDISS (2011); reviews include DAAs, Gold Teams, Red Teams, Pink Teams, Tiger Teams on C2AD (2012), iMM (2009-2012), SBIRS (2011), Space Fence (2011), JMS/HAC (2010), GOES-R (2011), SSC Orion EFT-1 (2011-2013). Technical assistance to DCGS-A (2011 & 2012), NES (2012), iMM (2006-Chief Architect, 2009-2012-Technical Leadership), JETSS (2008), SASSA (2008), Space Radar, ASAS Block II, .JIES, Granite Sentry, OBSS, National Test Bed.

Space Radar Chief Software, Ground, and User Architect *(2003 – 2008)*
Provide successful and innovative technical direction and technology development to the ground-based architecture, as well as both space and ground-based software architecture. Responsible for standards selection and development, establishing interaction with customer's developing software architecture, establishing a single program Software Development Plan for all subcontractors, with both customer and engineering approvals. Achieved successful spacecraft / ground unified software development plan and implementation across multiple contractors, and met all Government requirements levied during this period, including successful PDR reviews.

Senior Manager *(1997-1999, 2002-2008)*
Provide leadership, career and development opportunities, assessments, salary planning, rewards and recognition, and mentoring to department of 12-35 senior contributors and architects across the country. Managed incoming list of over 100 architecture candidates recruited from the Central Zone to vet for the IS&GS Information System Architecture program, and mentored and/or found mentors for almost all of the candidates. Conducted and arranged for many candidate interviews, and was a member of the IISA steering committee. As manager, staffed the architecture component of the ACS contract with qualified candidates, mentored and supported the staff during the rough startup period, and found assignments for those destaffed when the program was terminated for convenience.

All Source Analysis System (ASAS): Block I support and Block II leadership (1989-1995, subsequent consulting)
Trained and transitioned ASAS Block I staff for C interfaces and object-oriented approaches from MicroVAX/FORTRAN implementation.
Prepared major portions of system and software architecture and implementation strategy for All Source Analysis System for the Army. Responsible for software, architecture, and supported bill of materials technical sections in the proposal, with contributions recognized as a substantial factor in winning the contract. technical volume for Martin Marietta proposal for ASAS Block II.
Led System Architecture group for All Source Analysis System Block II program. ASAS moved from C & FORTRAN, VAX/VMS, and text menus to C, Ada, C++, Tcl/Tk & other languages as appropriate, POSIX/UNIX, and X/MOTIF. Client-server approaches were used for both database (Oracle) and other processing (OSF DCE); web technology inserted to promote distribution of intelligence products. Recognized by both management and customer as a long-term major contributor to the success of this program, as cited in award fee letters. Work led to several additional multi-year contracts with Canadian government and DARPA. Led team to achieve DoD's first Common Operational Environment (COE) Mission Application at Level 6, and first Army program certified compliant with COE. My designs and guided implementations were validated experientially. One baseline was designed for no single point of failure. At one point in formal testing, one of the testers accidentally tripped over the power cord to one unit, crashing it. No change was noticed by the other operators from the incident. The power incident was detected through the alert log. Another baseline was built for fielded reconfiguration, and therefore became the workhorse and go-to system for the entire Task Force XXI command and control system.

Methodology Development: Introduction of Object Oriented Analysis and Design, Agile Practices

Designed, created, and presented courses in object oriented analysis, design, and C++ implementation; led Tcl/Tk seminars; guided system administration, technology transfer, and software process work. Methods developed became part of the standard Lockheed Martin Astronautics process.

JIES (1987-1990)

Successfully integerated and led a database team responsible for supporting real-time testing of tactical data systems. Coordinated schema, sizing, and efficiency issues in interfaces to Ada code, and enabled all other development groups to progress at their best pace. Provided research, reported results, and established design for implementing tactical data communications protocol support.

OBSS (1984-1987)

Led a software team in designing, implementing, and integrating a network for a real-time dataconferencing system. Completed product on time and under budget. Technical advantages of the solution, which allowed shift change briefings with crews on-station, grew from a proof-of-concept, to a $250K demonstration system to a multi-year contract worth over $10M. This success led our same group to grow and successfully compete as the trusted systems engineering contractor for Granite Sentry and ISC2, orders of magnitude larger..

Research and Development

Led a number of Research & Development (R&D) efforts over the years, generally acting as the Principal Investigator.

Technical lead and chief system engineer for tasking, processing, exploitation, and dissemination (TPED) independent Research & Development activity. Project focus is application of modern technologies (component-based design and implementation, collaborative infrastructure) and implementation techniques (Java, CORBA, DOM, XML) to real-time and off-line producers and consumers of large volumes of data and metadata.

Performed mathematical database modeling and performance projection, including modeling techniques, technology evaluation, optical disk storage strategies, and graphics DBMS strategies. Developed unique, effective mapping algorithms for storing, retrieving, and processing maps for a graphical database, under severe computational restrictions.

Other research and development tasks include preparing for Ada development and contracting, exploring performance benefits of parallel processing in a deployed application, exploring application of cloud computing concepts to the intelligence community, and exploring the application of big data approaches to telemetry (rather than image) applications.

Published over 100 internal papers used to establish design and report research results to peers, contract design teams, proposal teams, and Government research sponsors.

EDUCATION

University of Colorado, Boulder, Colorado
1983-1984 Postgraduate studies
Michigan State University, East Lansing, Michigan
1978-1981 Received M.S. Mathematics in May 1980
Case Western Reserve University, Cleveland, Ohio
1972-1978 Received B.S. Mathematics in June, 1976

ORGANIZATIONS

USENIX, since 1981

OTHER FACTS

OPERATING SYSTEMS:
Proficiency Expert: UNIX (BSD, SysV, Posix), former Windows developer.

SOFTWARE LANGUAGES:
Proficiency Expert: C, C++. Java, JavaScript. Released several popular Tcl/Tk extensions.

AWARDS:
- Lockheed Martin Fellow, 2008-2015. Granted Fellow Emeritus status.
- Three patent application awards, 2002-2003; Patents 7,165,060, 7,437,408, 7,809,791
- Management and Data Systems Information System Architect certification, 2001; Information Systems and Global Services Information Systems Architect renewal as advanced architect, 2012
- Inventor of the Year Award, 2001
- Intellectual Property Special Award, 2000
- Employee Commendation, 1985, 1987, 1993, 1994, 1997, 1998, 2003, 2004, 2007
- Promotions, 1985, 1988, 1991, 1997, Fellowship
- Peer Awards 1993, 2001, 2003, 2010, 2013
- US Army Commendation, 1998, including first Army system to meet COE Level 6 requirements.
- Project Special Incentive Awards, 1993, 1994, 2004, 2008
- Corporate Technical Achievement Award, 1995, 1997

PUBLICATIONS:
Series on Big Data and Space Telemetry for Orion MPCV (2013-2015), Building a Build Plan (2012, with Dolores Gallus), Cloud Computing Overview (2012), User Stories and Abuser Stories For Nonfunctional Requirements (2009, with Dottie Acton), Tsunami Software Infrastructure (2000, with Kurt Heddleston), Use of Enabling Techniques Leveraging COTS To Provide Rapid Insertion and Migratory Integration in the All Source Analysis System (1997, with LTC Mike Hainline), Ada Implementation of Operating System Dependent Features (1986, with Randall Hay), plus over 100 published internal technical memoranda.

CLEARANCE: Inactive since retirement from Lockheed Martin. Last SSBI date: 7/8/2013.