

Simonetta Andrea Rodriguez

home 703-455-3548
mobile 571-334-5699

8016 Bethelen Woods Lane
Springfield, Virginia 22153
sar.www01 @ simjon.com

OBJECTIVE

Challenge, through energetic contributions to a dynamic organization (commercial, industrial or government) in the facilities-architecture-engineering-construction (FAEC) industry.

EDUCATION

Master of Science - Civil & Environmental Engineering Information Technology

Department of Civil & Environmental Engineering
Massachusetts Institute of Technology (MIT), Cambridge, MA, 2002

Bachelor of Science - Architectural Engineering

Minor: Project Management, University of Texas at Austin, Austin, TX, 1988

M.S. - Facilities Planning & Management/Human-Environment Relations

Department of Design & Environmental Analysis, Cornell University, Ithaca, NY, *completion expected December 2005*

Certificate in Drafting Technology, Nixon-Clay College, Austin, TX, 1972

SUMMARY OF QUALIFICATIONS

- 18 years full-time experience in complex and high-tech commercial design, architecture, facilities, architectural engineering, construction and IT fields; 14 additional years part-time experience while simultaneously engaged in undergraduate and graduate education; 12 year overlapping career as a drafting technician before and during college; many years part-time free-lance facilities consultant, computer HW/SW consultant, house designer and graphic designer.
- Rigorous formal training in architecture, engineering, construction, facilities and in IT/software development, supported in both fields by strong and diverse experience and leadership roles, in diverse environments, serving diverse customers.
- In IT/SW, systems engineer and systems architect, experienced making strong contributions to each phase of complex engineering and development projects, from program management and control, mission and requirements analysis, architecture definition, modeling, simulation, prototyping, detailed design, coding, high-tech hardware, test plans, testing, deployment, operations & support. *Please note:* IT-industry “requirements analysis” and architecture, is extremely similar to AEC-industry “programming” and architecture; the skills required are *virtually identical*.
- **Computer Skills, Expert & Trained:** Visio, Popkin System Architect, MS Word, MS Access including DB creation, MS PowerPoint, MS Excel, Paint Shop Pro.
- **Computer Skills, Experienced & Trained:** CADAM, CATIA, AutoCAD, AeroText (knowledge-based information extraction system), Unix, Linux, Windows NT/2000/XP Doors, MS Project, Visual Studio, C, C++, Java, JSP, JavaScript, HTML; HW/SW & network troubleshooting, IBM Data Explorer (3D visualization).
- **Computer Skills, Familiar** (some training): Maya (3D visualization), J2EE, Lotus Notes, Adobe Acrobat, RMS (requirements management system), MS FrontPage (web site development), BASIC, FORTRAN, Assembler, SharePoint web server, database design, PhotoShop, machine learning, intelligent systems, knowledge management.

RECENT FAEC INDUSTRY EXPERIENCE

Systems Engineer Senior, June 2002 - December 2002

Lockheed Martin Corporation, Mission Systems, MD, VA, FL, CA, NV

Strategic Airport Security Rollout Project, June 2002 - December 2002

This \$450 million, *six-month-deadline*, highly publicized program initiated federal security control at approximately 440 airports in the U.S; customer: the Transportation Security Agency (TSA). In one wave from the East coast to the West coast, every airport was evaluated by integrated field teams consisting of employees from each of the partners. At each airport plans were developed for the security arrangements and the training of security screeners, and airport case files submitted to headquarters in Clarksburg, Maryland. After case file processing and completion in headquarters, the case files were submitted to TSA, then the agency's directives carried out in the field at each airport. The program completed slightly ahead of deadline and within budget.

From program inception I served as the AEC-industry consultant for the IT-trained program manager, deputy program manager, Parsons subcontract program manager, and other Lockheed Martin headquarters personnel. Parsons Construction performed the facility remodeling required in the 90 largest airports for rollover to federal security control. A Lockheed Martin division performed the facility remodeling in the 350 smaller airports. As Lockheed Martin's AEC consultant and liaison, I performed technical analyses and evaluation of Parsons', TSA's and the Lockheed Martin subsidiary's construction contract documents, field guides, airport floor plans, construction statements of work, construction proposals, construction cost estimates, construction bases of estimate, and participated in construction subcontract negotiations. In addition, I led a "Tiger Team" providing focused analysis of the program's case file submission throughput process, identifying the need for a permanent data validation team; served on the headquarters systems engineering team, evaluating airport security designs and drawings and contributing to program throughput; served on the program emergency response team, deploying quickly to support field teams in Florida, Southern California, and Nevada, providing programmatic support, strategic planning, and development of planning/capability briefings for customer groups on location as required. In the Southern California & Nevada sector I served as the AEC-industry expert for the Lockheed Martin sector lead for all the airports in that sector, as well as sharing expertise gained in Florida regarding security screener training issues with the sector lead and the sector's Federal Security Directors, who were convened in LA to listen to my presentation. (*Reference: Jacek Schindler, Alex Ralli, contact information provided on request*)

Systems Engineer Senior, June 2001 - June 2002

Lockheed Martin Corporation, Mission Systems, MD & VA

U.S. Customs Service Modernization Project, June 2001 - June 2002

While performing IT systems engineering requirements analysis tasks (*described further below*), I served informally as the AEC-industry expert regarding U.S. Customs physical infrastructure, as it impacted IT systems requirements. I led the team that developed the system requirements for U.S. Customs front line, the ports: airports, seaports, truck ports and train ports. I visited many of these ports and evaluated the physical facilities to better inform my team's work.

Self-Employed Consultant, August 1993 - June 2001 (simultaneous with graduate fellowships and research)

Doing Business As: "Simjon.com", MD

Facilities-related consulting services for individuals, non-profit organizations and small-to-medium profit clients: For a commercial building in Boston purchased by a non-profit organization: performed a comprehensive building code and fire safety analysis, wrote a 20-page report of the findings, legal requirements and recommendations, briefed the organization's board of directors, and helped the board select an architect to perform the necessary remodeling design. For a professional art restoration expert: developed and presented a proposal for transforming a residential two-car garage into a art restoration studio, briefed the client's home owner's association to win approval, and advised the client about choosing ethical contractors.

Fellow and Research Assistant, August 1993 - January 2000

Cornell and MIT, NY & MA

- MIT 1995 - 2000: Coursework in complete software development cycle. Primary thrust of research: understanding what went wrong with "intelligent buildings." Supporting research: machine learning, algorithm analysis, advanced simulation languages, visualization systems and simulation/visualization technologies. MS thesis: using and evaluating a NASA-owned environmental simulation language and system named "Brahms"; attempted to use the language and system to model human worker interaction with habitable spaces and equipment. (I was the first user of the system who was not one of its developers.) (*Reference: Steven Lerman PhD, contact information provided on request*)

- Cornell University 1993 - 1995: Master of Science in Human Environment Relations, *completion expected 2005*. Coursework in research methodologies, human factors, psychology, planning, and management. Primary thrust of research: understanding “intelligent buildings.” Supporting research: computational systems in the built environment and computational visualization methodologies. MS thesis: performed a post-occupancy evaluation of an “intelligent building in Fairfield, CA owned by Pacific Bell, compared the data to an “un-intelligent” building, then used computational visualization techniques to directly demonstrate the data, which clearly showed the intelligent building’s vulnerabilities in occupant satisfaction. (*Reference: Alan Hedge PhD, contact information provided on request*)

Facilities CAD/CAE Systems Customer Support Consultant, July 1990 - July 1993

IBM, Computer Aided Design & Computer Aided Engineering Department, Endicott, NY

Provided computational design and engineering consulting services, dedicated to the plant’s in-house facilities engineering, architecture, planning, and industrial hygiene departments and customer groups. Working with customers, typically initiated and always participated in planning or management projects involving CAD, design and planning databases. Initiated and led teams to eliminate facilities data duplication or re-work, streamline facilities data flow, solve facilities business problems and provide solutions to meet ISO9000 requirements. Developed and provided new CAD training courses for facilities customers, streamlined existing CAD training and initiated on-line CAD training. Served as department "market-driven-quality" leader, initiated extensive survey of customers, and initiated the use of computer conferencing for inter-plant customer communication.

Facilities Architectural Engineer, June 1988 - June 1990

IBM, Facilities Engineering, Boulder, CO

Managed fast-track internal projects, from design process to implementation and completion, projects ranging from \$500 to \$3-4 million, concurrent with a management-mandated focus on computer facilities and usage of computer-based design and project management techniques. Initiated and led quality assessment and upgrade of antiquated site construction specifications to a modernized computer-based CSI system. Helped develop an updated facilities computer aided design (CAD) strategy, initiated implementation of the master plan in a computational rather than paper-based environment.

EXPERIENCE TIMELINE

Systems Engineer Staff, December 2002 - December 2005

Lockheed Martin Corporation, Integrated Systems & Solutions, Engineering, TRC, VA

Actively engaged in rotational development assignments: Hiring Manager, Sep - Oct 2004, CIO/SETA program; Regional Recruiting Center. Web Application Vulnerability Analyst, Mar, 2004 - May, 2004, VS3 program. Systems Architect/Engineer, Sep 2003 - Feb 2004, System Architecture Tiger Team: Popkins System Architect and DOORS tasks for the GeoScout program. Systems & Test Engineer, Apr 2003 - Sep 2003, Solutions Knowledge Management/Intelligent Information Factory R&D programs: mission analysis, requirements analysis, proposal support, validation and testing, R&D coordination, user interface design, research. Founding member of the Technical Working Group (TWG) board; initiated and led the TWG Knowledge Management research project. Provided three training programs, two “ProSpot” presentations and individualized “mentoring moments” with management approval in the Technical Resource Center. (*Reference: Charles Anderson, Robert Humphreys, contact information provided on request*)

Systems Engineer Senior, June 2001 - December 2002

Lockheed Martin Corporation, Mission Systems, MD & VA

Strategic Airport Security Rollout Project, June 2002 - December 2002 (*details above*)

Systems Engineer Senior, June 2001 - June 2002

Lockheed Martin Corporation, Mission Systems, MD & VA

U.S. Customs Service Modernization (eCP) Project

Led an integrated process analysis team in analysis, development, documentation and review of requirements for the Automated Customs Environment computer system. Wrote portions of the system requirements document (SRD) for the complete system and the requirements specification set (RSS) for the first increment. Led two Tiger Teams providing focused analysis to resolve critical problems. As a liaison to U.S. Customs’ Trade Support Network, provided public briefings to explain the project’s progress. As chief engineer assistant, provided technical engineering support to the system architecture and development effort. Wrote sections of a system/subsystem design description (SSDD); modeled and analyzed systems architectures; performed technology assessments and trade studies; helped develop system design life-cycle

(SDLC) documents; coordinated integrated product team (IPT) responses to requirements and architecture constraints; coordinated engineering review board (ERB) submissions; contributed to the formal risk management process; coordinated with the test and integration team. (*Reference: Debra Josey, contact information provided on request*)

Self-Employed Consultant, August 1993 – June 2001 (simultaneous with graduate fellowships and research)
Doing Business As: “Simjon.com” and “PC Doctor”, NY, MA & MD

Consulting services for individuals, non-profit organizations and small-to-medium profit clients: Designed and implemented the structure, functionality and appearance of a travel firm’s first Intranet; created online tutorials, developed and presented a series of introductory sessions to all employees. The Intranet became an indispensable part of doing business for the firm, providing essential functional information required by employees to perform their jobs. Performed custom technology systems analyses, evaluations and assessments. Repaired personal computers, set up small networks, and provided training.

Fellow and Research Assistant, August 1993 – January 2000 (*details above*)
Cornell and MIT, NY & MA

- MIT 1995 - 2000: (*details above*) (*Reference: Steven Lerman PhD, contact information provided on request*)
- Cornell University 1993 - 1995: (*details above*) (*Reference: Alan Hedge PhD, contact information provided on request*)

Facilities CAD/CAE Systems Customer Support Consultant, July 1990 – July 1993 (*details above*)
IBM, Computer Aided Design & Computer Aided Engineering Department, Endicott, NY

Facilities Architectural Engineer, June 1988 – June 1990 (*details above*)
IBM, Facilities Engineering, Boulder, CO

Engineering & Design Technician, 1972 – 1988

(simultaneous with part-time college education 1972-1979, full-time college education 1983 –1988)

- Free-Lance **Residential Designer**, Austin, TX, 1981 –1988: designed houses for individual clients, some construction management.
- Resident Assistant, **University of Texas Housing Department**, 1984 –1988: on-site always-on-call manager of married student housing units.
- Civil Engineering Assistant, **Murfee Engineering**, Austin, TX, engineering coop semester Spring 1986: large-scale subdivision development including road design, water and drainage systems design, COGO programming in BASIC.
- Structural Engineering Assistant, **Brent Rauhut Engineering**, Austin, TX, summer 1985: structural design, structural drafting, and construction management.
- Architectural Assistant, **Fred Worley Architect**, Austin TX, summer 1983 & summer 1984: designed or helped design houses, assumed full responsibility for Mr. Worley’s office in his absence during his vacations. (*Reference: Fred Worley, contact information provided on request*)
- Draughtsperson and Assistant Draughting Supervisor, **Trintoplan Consultants Limited**, Trinidad & Tobago, West Indies, 1979 – 1981: helped design a steel mill, an aluminum smelter plant, highways, and a massive industrial park drainage system.
- Drafting Technician, **Office of Facilities Planning and Construction**, University of Texas at Austin System Administration, Austin, TX, 1978 – 1979; construction documents including drawings and specifications for campus projects across Texas, especially research facilities (for example, a chimpanzee research park).
- Drafting Technician, **Fusion Research Center**, Physics Department, University of Texas at Austin, Austin, TX, 1976 – 1978: helped design a fusion physics reactor and related high-tech equipment. (*Reference: Roger Bengtson PhD, contact information provided on request*)
- Drafting Technician, **Page Southerland Page – Architects**, Austin, TX, 1975 – 1976: Construction documents for hospitals.
- Drafting Technician, **City of Austin Planning Department**, Austin, TX, 1974 – Drew map, plats and produced other documents for planning and zoning purposes..
- Engineering Aid, **Texas State Parks & Wildlife Department Facilities Engineering**, summer 1974: Measured and produced drawings of state park facilities and utility systems.

- Drafting Technician, **Emerson, Fehr, Newton – Architects**, Austin, TX, 1973 – 1974: Working with the partners, developed construction documents—particularly all the details—for commercial projects, such as the City of Austin airport addition and remodeling project, which added a concourse, jetways, and expanded runways.
- Drafting Technician, **John Fitzpatrick –Architect**, Austin, TX, 1972 – 1973: residential design, supervisor: Fred Worley (*referenced above*).

PUBLICATIONS

- LM whitepaper, “Engineering Analysis of the LM/Parsons Construction Negotiation Documents” Strategic Airport Security Rollout Program, 2002.
- LM whitepaper, “Commercial Import Release System: Input Data Concept.” U.S. Customs Modernization e-Customs Partnership, 2001.
- “Evaluating Past and Designing Future ‘Intelligent Buildings’ with a Human-Centered Computing (HCC) Approach.” American Society of Civil Engineers Annual Convention, 1998.
- “Visualization Techniques Used to Analyze Building Systems and Occupant Data,” co-author Alan Hedge Ph.D., Proceedings from Intellibuild ‘95 and Facilities ‘95; 1995.
- Computational Scientific Visualizations for Hedge, Alan & Singe Morimoto: “Beneficial Effects of a Preset Tilt-down Keyboard System on Posture and Comfort in Offices.” Cornell University Report, 1995.
- “Scientific Visualizations for Intervention for Prevention/Treatment of Carpal Tunnel Syndrome, the Cornell/Honeywell Keyboard Systems Study.” 1994.
- IBM whitepaper, “The Differences Between CADAM MDA-30 and CADAM V3R2: a Guide to Training for 2D CADAM Users,” co-author Ed E. Balan. Endicott Technical Report #TR-B983. Computer Aided Design Department, System Software and Release Department, IBM Endicott, Technology Products LOB, 1993

AWARDS AND ACTIVITIES

Fellowships:

NASA Graduate Student Researcher Program, 1999-2003; National Science Foundation Summer Institute in Japan Program, 1999; National Science Foundation Engineering Education Scholars Fellowship, 1998; National Science Foundation Graduate Research Fellowship, 1995-1998; Cornell University Flemmie Kittrell Graduate Fellowship, 1994-1995; Cornell University State University of New York Fellowship, 1993-1994.

Other Awards:

Lockheed Martin promotion from “Senior” to “Staff” engineer with pay increase, September 2004. Lockheed Martin performance-based pay increases: October 2002, October 2003 and October 2004. Bronze Medal, ASCE Annual Convention “Computing in Action”, 1998. Phi Kappa Phi Honor Society, 1995. Gamma Sigma Delta Honor Society, 1995. Kappa Omicron Nu Honor Society, 1994. Phi Alpha Epsilon Architectural Engineering Honor Society, 1988. Chi Epsilon Honor Civil Engineering Society, 1987.

Volunteer Activities:

Speech at the 2005 Dr. King Celebration, sponsored by the Germantown Bahá’i Community, Women Who Care Ministries, and the Montgomery County Recreation Department, at the Germantown Community Center, Maryland, January 16, 2005; “Girls Excelling in Math & Science” AEC-industry hands-on program presenter at Dogwood Elementary School, March 2004; Presentation on the engineering process to gifted and talented children at Dogwood Elementary School, January 2004; Lockheed Martin children’s booth at Celebrate Fairfax, June 2003; “Rebuilding Together”, Alexandria, April 2004, & Montgomery County, 2003; Designed and built an aluminum 6’ x 6’ x 9’-tall display booth for a faith organization, May 2003, redeployed it June 2004, organization’s team lead for Celebrate Fairfax 2005; Workshop facilitator at Race Amity conference at American University, February 2003; Ongoing, chair of a volunteer organization board; Numerous public speeches on science vs. religion, race unity, gender equality and other topics, 1968-present, and into the future; Numerous science fairs, mentoring programs, scout troop presentations, career fairs, teach-the-teacher programs and technology exhibitions for children and youth, especially girls, 1986 – present, and into the future.