

Sarah C. Smith

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SKILLS

Programming Languages: Java (5 years), C++ (1 year), SQL, Visual Basic, Fortran 77 (5+ years)
Java API's: Swing, AWT, JNI, JOGL OpenGL, Java2D
Development tools: Eclipse, CVS, JUnit, Bugzilla, JBuilder, GCViewer
UML Modeling: Together ControlCenter, Poseidon, UMLet
Database/Data Storage: PostgreSQL, Sybase, HDF5
Web/Enterprise: Java applets, Servlets, Tomcat, JDBC, XML, HTML
Operating Systems: Windows, Linux, UNIX

EDUCATION

Computer Science courses, University of Colorado, Boulder – Database Systems (2002), Object-Oriented Programming and Design (2001), Java II/Math Algorithms (2000), Intermediate/Advanced C++ (2002, Continuing Education course)

M. S., Applied Mathematics – Computer Science emphasis, 1987, University of Colorado, Denver

M. S., Hydrology, 1982, Mackay School of Mines, University of Nevada, Reno

B. A., cum laude, Geology, 1977, Franklin and Marshall College, Lancaster, Pennsylvania

CERTIFICATION Sun Certified Programmer for the Java 2 Platform 1.2, 2002

EXPERIENCE

Platte River Associates, Boulder, CO; software developer, 2003 – present (contract)

Developed a sophisticated user interface and data model for a commercial oil and gas exploration product. The product is primarily programmed using Java, with Swing for GUI components, OpenGL (JOGL) for 3D visualization, JNI to access existing C and C++ code, and XML for data model persistence.

Worked on all aspects of the software as part of a small team using object-oriented principles and design patterns. Swing GUI components include: trees to display and edit model data; table editing with copy/paste capability; interactive, easy-to-use dialogs; toolbar editing; and Java2D displays. Worked on the 3D display of model data and added interactive 3D editing capability. Responsible for a major enhancement of the map view, that included a redesign of the GUI as well as increased functionality. Programmed JNI C and C++ code. Worked extensively on the underlying data model.

Participated in user interface design, working with subject matter specialists and other software developers. Worked closely with product testers.

University of Colorado, Boulder, Colorado; teaching assistant (part time), 2002

Teaching assistant for Object-Oriented Programming and Design (CS-4448). Responsible for grading both student programming and design assignments, and tests. Researched UML tools appropriate for class use. Worked with Computer Science lab staff to install Together ControlCenter and JBuilder on UNIX lab workstations. Helped students with programming assignments, Java, UML, object-oriented concepts, refactoring, and design patterns.

2000 – 2003: Updated computer skills focusing on Java, J2EE, C++, database systems, object-oriented programming and design, design patterns, GUI development, and web and enterprise solutions. Completed classes at University of Colorado, Boulder. Projects have included:

- Web site featuring applets aimed at teaching mathematical concepts. Applets were developed using Java, object-oriented principles, and design patterns.
- Two-player game applet/application that includes three games, an optional computer player, an undo move feature, and XML save/restore. Also published on web site.
- Stock research web application using servlets, Tomcat, JDBC, and a PostgreSQL database. Installed on home intranet. Previously installed on CU's Wild Net.

1991 – 2000: Stayed home with young children, volunteering in many capacities.

Terrasciences, Littleton, Colorado; programmer/analyst, 1985 – 1991

Developed, tested, and maintained software for a commercial graphical workstation product for petroleum exploration. This product integrated mapping, visualization, and sophisticated petrophysical log analysis. Programmed in a team environment through several software upgrade cycles using Fortran and structured design methods.

Additional duties included training, writing documentation, customer support, installation, and porting software to mainframe computers (including UNIX systems). Supported the sales team at client presentations and industry trade shows. Represented Terrasciences in the Peoples Republic of China and in Costa Rica, where tasks included requirements analysis, contract negotiation, installation, and user training.

U. S. Geological Survey, Branch of Exploration Geochemistry, Lakewood, CO; geologist, 1983 – 1985

Evaluated the economic mineral potential of areas in Alaska and California based on analysis of stream sediment, bedrock, soil, and water chemistry. Major duties included geochemical interpretation, database maintenance, applying and interpreting statistical methods including factor and discriminant analysis, statistical map analysis, and report preparation. Work resulted in several USGS publications.

Beak Consultants, Aurora, Colorado; hydrogeologist, 1981 – 1983

Principal author of ground water and geology baseline environmental reports for a proposed platinum-palladium mining and processing facility in south-central Montana. Responsibilities included planning and implementing scientific investigations and analyses, supervising field operations, task management, and budget development and tracking.

D'Appolonia Consulting Engineers, Englewood, Colorado; geologist, 1980 – 1981

Conducted hydrogeologic investigations for mining and energy clients.

Water Resources Center, Desert Research Institute, Reno, Nevada; research fellow while pursuing M. S. degree, 1977 – 1980

Participated in a team effort to determine the feasibility of artificially recharging Colorado River water into the Las Vegas Valley aquifers, and presented the results in a thesis titled "The Hydrogeochemistry of the Principal Aquifers in Las Vegas Valley, and the Chemical Effects of Artificial Recharge of Colorado River Water." A thermodynamic equilibrium/mixing model was converted to run on a CDC 6400 computer.

MEMBERSHIPS Boulder Java Users Group
Boulder Design Patterns Study Group