
BRIAN L. ENKE

Summary of Qualifications:

A Senior Software Engineer and Project Manager with 21 years of challenging professional experience creating high quality software and tools within complex development environments. A highly creative problem solver who excels at implementing long-term strategic solutions over short-term reactive ones. A flexible and versatile IT professional who is equally comfortable leading a project team and working within one. Masters degree from Northwestern University, specializing in advanced software algorithms, AI, and 2D graphics.

Software Languages	C, C++, UNIX, CLIPS, Java, SQL, Tcl/Tk, Javascript, IDL, ISIS, Matlab
Operating Systems	UNIX, Windows, SUN Solaris, Linux
Environments	ECMS, IMRTS, Microsoft Visual C++, GNU, 2D/3D Graphics, AI

Work Experience:

SOUTHWEST RESEARCH INSTITUTE, Boulder CO, 2001 - Present.
A leading private institution that conducts planetary science studies.

Research Analyst - Software Researcher and Developer

Developed tools to assist researchers who are studying impact craters, asteroid collisions, and the Earth's magnetosphere.

- Coordinated research between SwRI scientists and NASA-JPL engineers into techniques for semi-automated impact-crater detection. Advanced the Technology Readiness Level to the point where an end-user tool could be written. Also created dynamic AI evaluation tools, regression tests, and graphical plotting tools.
- Simulated asteroid impacts and magnetospheric inversions on high-performance Linux clusters at JPL and SwRI. Automated the simulations, mined the parameter landscape, and modified the Smoothed-Particle Hydrodynamics, N-body, or inversion code as needed. Results include two *Icarus* papers, one *Nature* paper, and several promising new lines of research into the thermal evolution and composition of asteroid families.
- Used directed-learning techniques (Support Vector Machines) to optimize simulation results. Developed new directed-learning strategies to enhance the tools and process.

PUBLISHAMERICA, Frederick, MD, 2002 – Present.

Published Author of Novel: *Shadows of Medusa*

Authored a 192,000 word, 525-page true-science fiction/mystery thriller about Mars exploration. Successfully completed all aspects of researching, writing, publishing, marketing, and selling the novel. Also designed a seller's website, populated with science content. A sequel is in-progress.

NEDERLAND INNOVATION SOCIETY, Nederland CO, 2005 - Present.

A technology start-up that reinvests invention profits into local education and community programs.

Founding Member and Mentor

- Mentored three software programmer-students on the 2005 Nederland High School Robotics Team. Our rookie team finished in 8th place of the 38 high schools competing in the Denver regional of the 2005 FIRST Robotics competition. 2006 team will have 30 students.
- Began development of two robotics and sports-training inventions. Progress is pending.

BELL LABS - AT&T / LUCENT TECHNOLOGIES, Chicago IL, 1984 - 2001.

An international telecommunications equipment research and manufacturing company.

Lead Designer and Developer, 5ESS International Software Update (SU) Process

Actively managed and assisted teams in all areas of the 5ESS SU process, project management, and customer support. The 5ESS project was a critical source of corporate revenue, with over \$15 billion in year 2000 sales, and over 5,000 full time multi-national developers.

- Created and supported the International Parallel Streams IDE, a flexible, distributed development environment that allows delivery of bug fixes and features to specific groups of customers based upon country or application - a major source of customer satisfaction and a significant strategic corporate advantage for Lucent.
- Used outstanding problem solving skills to rescue in-jeopardy customer feature deliveries, saving Lucent over \$100 million each year.
- Assisted over 100 multi-national development teams to fix bugs and develop new software features in C.
- Realized over \$30 million in development cost savings each year by enhancing and supporting SU tools and Unity/SQL databases using C, C++, and UNIX Shell languages.
- Helped a high-visibility team migrate the Parallel Streams IDE from UNIX V to Solaris, successfully solving many significant customer performance issues by upgrading to larger RAID file servers, faster CPUs, and better server load-sharing tools.

INTERNATIONAL MARS SOCIETY, Denver CO, 1999 - Present.

An international, non-profit scientific organization dedicated to the exploration and settlement of the planet Mars.

Technical Consultant to the Board of Directors, Local Chapter Chairman of the Board

- Developed requirements for a Mars Habitat, Mars Mission Control, and mission communications protocols.
- Worked as Director, Journalist, Engineer, and Tech Support at Denver Mission Control for a full-scale simulation of a Mars mission, run jointly by the Mars Society and NASA on Devon Island, near the North Pole.
- Led eight successful college, high school, and community forums on Mars exploration. These events were intended to motivate students and community members to pursue studies related to space exploration.
- Presented four technical talks at international Mars-science conferences. Scheduled keynote speaker at the DaVinci Institute's Night with a Futurist, January 2006.
- Currently serving as the Rocky Mountain Mars Society chapter's Chairman of the Board, and also as the Chapter Contact for new members.

NORTHWESTERN UNIVERSITY, Evanston IL, 1991 - 1996.

Masters Project

Designed and implemented a graphical representation of several complex 2D geometric algorithms, with relevancy to optimal topography of wireless communication networks.

- Implemented Star-Shaped Polygon, Convex Hull, Monopolar Spanning Tree, Dipolar Spanning Tree, and Minimum Diameter Spanning Tree algorithms.
- Proved that the algorithms above could be coded and integrated using commercially available development tools while maintaining the optimal running time of $O(N^2 \log N)$.

NORTHWESTERN UNIVERSITY, Evanston IL, 1993.

Software Project Design and Development Team Member

Designed an interactive map traversal system as a class project, based on requirements from a local software company. Manipulated massive graphics databases, designed memory management via parallel process threads, and prototyped look-ahead caching for user event prediction. Project grade was an A.

Education:

- MS-CS Degree from Northwestern University, 1996.
- BS-CS Degree from North Central College, 1990.
- Internal training from Lucent Technologies in UNIX, C, C++, ATM, TCP/IP, Java, Javascript, Tcl/Tk, Perl.
- Internal training from SwRI in Matlab, ISIS, and IDL.

References:

- References are available upon request...