



KCI
PO Box 1641
Litchfield Park, AZ 85340
(605) 427-2649
Toll Free (800) 694 0236
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KCI Consultant Career Summary

An accomplished professional with over 20 years experience in high performance computing with the unusual combination of a strong background in pure and applied mathematics and extensive experience in supercomputing. During 13 years with Cray Research, Inc. was acknowledged for exceptional abilities in benchmarking, code porting and optimization, and the development of mathematical algorithms.

Work Experience

Consultant (1995-present)

- Co-developed parallel program benchmarking analysis tool Perfbench for HPCMO which put it into the public domain as GNU license.
- Developed synthetic benchmarks for MSRC acquisitions which tests cpu, network, and memory performance for Instrumental, Inc.
- Optimized and Parallelized Environmental Engineering codes for University of Texas at Austin, Rice University, and Notre Dame.
- Developed parallel version of wave model STWAVE and integrated it into hydrodynamics code ADCIRC for ERDC.
- Ported and Optimized ADCIRC to 1024 PE Beowulf for LSU hurricane prediction center.
- Parallelized Tom Cole's W2 Water Quality code for CHSSI.
- Optimized seismic codes for ExxonMobil.

Research Associate University of Texas at Austin (2000-2003)

- Developed parallel version of UTPROJ3D, a C++ program which solves an unstructured elliptic problem using domain-decomposition and multigrid.
- Developed parallel version of Hydrodynamics modeling code ADCIRC .
- Developed parallel version of Water-Quality Modeling code CE-QUAL-ICM.

Application Analyst for Cray Research, Inc. (1982-1995)

- Provided field support for Exxon, Shell, BP, Phillips, Nasa Johnson, University of Texas, University of Houston, and Rice University.
- Developed Machine code version of mixed radix FFT
- Co-developed 3D FFT with Mick Edwards

Software Engineer for Texas Instruments, Inc (1979-1982)

- Developed complete test system for DFS VI Analog Module
- Research Grant to study feasibility of real-time correlator based on Parr Number Transforms



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Knowledge & Skills

- Numerical Analysis and Signal Processing
- Engineering Applications Programming
- Performance Tools for Parallel Performance and Optimization
- Programming Languages of Choice: Fortran95, C++, Python
- Strong Writing and Communication Skills

Education

Ph.D. Applied Mathematics, Rice University (1995)
Dissertation Title: Preconditioner Schemes for Elliptic Saddle-point Matrices Based
Upon Jacobi Multi-band Polynomial Matrices.
M.S. Applied Mathematics, Rice University (1994)
M.S. Pure Mathematics, University of Houston (1978)
B.S. Pure Mathematics, University of Georgia (1968)

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