

Christopher George Aziz

High Performance Computing Analyst

Do you want your computationally intensive scientific codes to run faster and more economically? I can do that.

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I am a specialist in HPC tuning, known by my peers for my intuitive skills and keen insights which allow me to find ways to speed up codes that others overlook or dismiss. I want to bring my experience in this field to a short-term or contract position.

With a talent for solving problems that frustrate or confuse others, I thrive on solving difficult and novel programming problems. I take pride in delivering feasible and cost effective solutions to problems that were previously considered intractable. I excel at finding optimal high performance computing solutions for both architectural families and machine classes. As a Linux/Unix software architect, team leader, and analyst with strong communication skills, I have 25+ years of professional HPC programming and design experience to contribute to your problem solving team.

Specific technical skills:

- excellent requirements extraction, analysis, design and technical explanation skills to both technical and non-technical individuals and groups
- simple, clear and orderly technical writing style and excellent communication skills
- experienced at knowing how far to push the envelope
- clean analysis, specification, design and coding style, structured, agile, component and object oriented programming/design (OOP/OOD)
- broad UNIX and Linux experience: Solaris, Irix, Debian, RedHat, Ubuntu
- superior software diagnostic skills
- enjoy mentoring, exchanging skills, leading presentations and training courses, and sharing knowledge with others
- take pride in guiding projects from initial ball parking through final production delivery

1985-present Advanced Processor Research Ltd. **President and Owner** **Independent Contractor**

- high performance computing (HPC) code speed up
- scientific, seismic and image processing with an emphasis on high performance computing
- system level design, development and debugging (both rescue & strategic)
- general graphics and raster implementations

Key Results as Software Analyst and Researcher:

- Researched and defined fundamental data formats, data work flow and archiving requirements for an automatic state of the art gas chart interpretation system.
- Designed and developed platter file structure for write once optical disk platters without using rewritable media for directories.
- Designed and developed easy to control seismic horizon picker.
- Software Architect and Project Leader for pioneering seismic workstation development
- Software analyst and implementer for pipeline leak detection complete fail over and infrastructure support system.
- Rescued unrunnable seismic workstation project riddled with memory clobbers due to C++ alloc/free and overload mismatches.
- Kirchhoff migration 3.7X speedup on first large (beta release) SUN Ultra SPARC SMP
- Kirchhoff migration 2.15X speedup (Kelman Technologies)
- Kirchhoff migration evaluation benchmark SGI R8000 SMP. Follow up code review by SGI internal HPC expert concluded: "I cannot improve on Chris' result".
- 2X speedup over vendor FFT routines by assembly coding for Fujitsu VPX-240 long vector supercomputer
- 6X speedup over seismic software vendor FK filter program
- Using FPS attached processors replaced 2 CPU hours per day on IBM mainframe used to rasterize trace data with 2 hours per day of channel connect to attached processor. A CPU hour on this IBM mainframe was valued at \$2000 per hour, saving \$4000 per day.

Education: BSc (Computer Science) University of Western Ontario

Languages: C, C++, FORTRAN, MATLAB, various Linux and UNIX shell scripting, MPI, openMP, Purify, various assembler languages and microcoding

Memberships:

ACM - Association for Computing Machinery
CAMUG - Calgary Agile Methods Users Group
CSEG - Canadian Society of Exploration Geophysicists
CUUG - Calgary Unix Users Group
CLUG - Calgary Linux Users Group
PIMS - Pacific Institute for the Mathematical Sciences

Volunteer Work:

Calgary Unix Users' Group (CUUG) President 4 terms, Director for 10+ years
School Volunteer and Technical (Computer) Advisory Committee member - 6 years
Youth Soccer Coach - 10 years
Cub & Scout Leader - 10 years
Red Cross First Aid - January 2003