YUXIANG ZHANG

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OBJECTIVE

To obtain an intern position at ExxonMobil with analytical and programming skills, with special interests in wave field modeling and near surface imaging.

RESEARCH EXPERIENCE

Marine EM Laboratory, Scripps Institution of Oceanography   09/2013-Present
Research Assistant   *UC San Diego*

· Integrated Spectral Bisection Algorithm(C) into the 3D EM modeling package MARE3DEM(Fortran90), using the Intel C and Fortran compilers.
· Implemented residual based goal-oriented error estimator to MARE3DEM, improving the accuracy and convergence.
· Modularized the computational geometry algorithm to Fortran90 subroutines and integrated them into MARE3DEM.
· Accelerated the stiffness matrix formulation for the weak form of the discretized Maxwell Equation.
· Collaborated with Prof. Jeff Ovall to develop new 3D computational geometry algorithm.
· Found a new way to refine the 3D finite element mesh, using the longest edge bisection technique in the Finite Element ToolKit(FETK).
· Designed and established the C-Fortran mesh refinement interface between FETK and MARE3DEM, debugging using LLDB.
· Collaborate with the Center for Computational Mathematics to integrate Bank and Holst Domain Decomposition Paradigm into MARE3DEM.
· Conducted performance analysis for MARE3DEM on the local HPC, with a 3D model including bathymetry and resistive oil reservoir.

San Diego Supercomputer Center   06/2013-09/2013
Research Assistant   *UC San Diego*

· Performed strong and weak scalability test for the paralleled anelastic 3D wave propagation package(AWP) on Triton Shared Computing Cluster(TSCC).
· Completed the performance(Profiling and tracing) analysis of AWP, using TAU on Kraken Cluster.
· Conducted large-scale 3D numerical simulations of seismic wave propagation on the distributed architecture of TSCC.
· Established the file I/O interface between AWP and the full-3D waveform tomography package(F3DT) to improve run-time efficiency.
· Researched the theory of Full 3D Waveform Tomography and transplanted the package onto Triton Cluster.

Center for Subsurface Imaging and Fluid Modeling   02/2012-04/2012
Research Intern   *King Abdullah Univ. of Sci. and Tech.*

· Seismic data processing and interpreting, using traveltime and waveform tomography.
· Participated onshore seismic survey and electromagnetic data acquisition, improved team working and communication skills.
· Studied seismic interferometry and the theory of seismic imaging.

Institute of Geology and Geophysics   06/2011-09/2011
Research Intern   *Chinese Academy of Sciences*

· Researched and tested the finite difference scheme for elastic wave propagation.
· Studied the theory of frequency-domain Full Waveform Inversion.

COMPUTER SKILLS

Languages: FORTRAN 90/03, C, C++, CUDA, MPI and Unix Shell Scripting.
Tools :   LLDB, Matlab, Subversion, Madagascar, LaTeX, TracWiki and Vim.

EDUCATION

Ph.D., Applied Geophysics
University of California, San Diego   2012-Present
Selected courses: AdvTech/Computational Math I/II/III (A+), Parallel Comput.Sci. & Engineer (A+)

B.S., Applied Geophysics
University of Science and Technology of China.   2008-2012
G.P.A 3.7/4.0

Exchange Student, Geology
University of Göttingen, Germany.   09/2011-02/2012

EXTRA-CURRICULAR ACTIVITIES

06/2014	UC San Diego PhD Career Conference, Volunteering
05/2014	MOCHA marine MT deployment Oregon Offshore, Volunteering
03/2014	Seafloor Electromagnetic Methods Consortium, Presenting
12/2013	American Geophysical Union Annual Meeting, San Fransisco
11/2013	Nvidia GPU Workshop, San Diego Supercomputer Center
08/2013	Discover Big Data Workshop, SDSC 2013 Summer Institute
06/2013	MPI Workshop by XSEDE, UC Los Angeles
06/2013	UCSD Triton 5K Running

HONORS AND AWARDS

2012	RA Scholarship, UCSD/SDSU
2011	Erasmus Scholarship, EACEA
2011	Outstanding Student Scholarship, USTC
2010	National Aspiration Scholarship.
2010	Outstanding Student Scholarship, USTC
2009	Outstanding Student Scholarship, USTC
2008	Provincial Champion in Mathmatics, National College Entrance Exam.

MEMBERSHIP

American Geophysical Union
Society of Exploration Geophysicists
UCSD Strides Running Club
CouchSurfing International Community
Association of Scientific Expedition of USTC