Graduate Research Student Opportunity at SDSC

Academic Division:
Graduate majoring in Computer Science, Computer Engineering, Applied Mathematics, or Electric Engineering

Appointment Length/Period:
Immediately available; 24.99% time during semesters, and 100% during summer, for (4/1/22-3/31/24), with potential for multi-year extension.

Job Description:
The High Performance GeoComputing Laboratory at San Diego Supercomputer Center, University of California at San Diego (UCSD), invites applications for a graduate research position to co-design a real world application onto future NSF Leadership-Class Computing Facility.

- Port, benchmark and optimize an ACM Gordon Bell prize winning application, AWP-ODC, for extreme-scale earthquake simulation.
- Co-design application with hardware in collaboration with computer scientists from Texas Advanced Supercomputing Center (TACC) and vendors (e.g. Intel, AMD, NVIDIA) preparing for the next-generation architectures, which is being designed to have a ten-fold time-to-solution improvement over the current NSF Leadership system.
- Technical support of seismic applications in collaboration with Southern California Earthquake Center domain scientists
- Attend weekly or bi-weekly calls, and travel to present at high performance computing conference/workshops

This work is a great opportunity to gain hands-on experience on high performance computing, hardware level code optimization, large parallel systems with optimized communications using state-of-the-art programming models and compute architectures.

Qualifications Needed for the Job:
- Graduate majoring in Computer Science, Computer Engineering, Applied Mathematics, or Electric Engineering, Ph.D. student preferred.
- Demonstrated work experience with at least one of the key scientific programming languages such as Fortran, C or C++, MPI, OpenMP, CUDA, HIP etc parallel experience are a plus
- Good understanding of numerical methods, familiar with partial differential equations, experience or a passion in developing scientific code using parallel environments
- Experience with supercomputing environment and/or Unix/Linux OS
- Responsible, self-motivated with track records to meet project deadlines
- Excellent oral/written communication skills

For more information or to apply, please contact:
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For information about the SDSC, visit http://www.sdsc.edu
For information on AWP-ODC, visit http://hpgeoc.ucsd.edu