Postdoctoral position in the Advanced Simulation and Computing Center of Stanford

ASCI Alliance Program at Stanford University
The goal of the ASCI Alliance Program at Stanford University's Center for Integrated Turbulence Simulations (CITS) is to build a computational simulation of a jet engine. This requires modeling the key engine components, including the compressor, combustor, and turbine. In addition to this modeling effort, Stanford is developing a new computing platform, Merrimac, with a computing power equivalent to millions of personal computers. Merrimac uses stream architecture and advanced interconnection networks to give an order of magnitude more performance per unit cost than cluster-based scientific computers built from the same technology. Merrimac is designed to be a streaming scientific computer that can be scaled from a $20K 2 Tera Flops (10^12 operations per second) workstation to a $20M 2 Peta Flops (10^15 operations per second) supercomputer.

Goals of research project
1. Algorithmic development and numerical analysis of scientific software for aircraft engine simulation
2. Analysis of performance of scientific codes on the streaming supercomputer Merrimac
3. Development of language and hardware simulator for the multi-processor version of Merrimac

Expertise required
1. Scientific computing and computational mathematics
2. Computer organization and architecture
3. Parallel compilers and languages for parallel computing platforms
4. PhD in one of the following disciplines: computer science, applied mathematics, computational engineering

To apply, send to darve@stanford.edu: a curriculum vita and a letter describing your experience and how you would contribute to the project.

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