

REU Positions in NSF Cloud and Autonomic Computing Center at UA Site

Project Scope: In order to harness computational capability of the emerging advanced computing architectures, new algorithms and software development paradigms are needed. For this, the UA Site of the NSF Center for Cloud and Autonomic has identified projects for undergraduate student researchers that focus on understanding and exploiting the fundamental aspects of hardware and associated system software for emergent and future computing architectures. The research activities planned for the students will be related to the current projects on: (1) High Performance Machine Learning Based Data Analytics, (2) Modeling Composable Data Center and Resource Management Strategies, and (3) Datacenter Scale Heterogeneous Computing.

These projects open several research opportunities that are within the scope of the background of a computer science/engineering undergraduate student, and are both challenging and rewarding. This project will give the undergraduate students an excellent opportunity to gain research and development skills in the CAC environment with opportunities to present their work to audience from both academic and industry backgrounds and motivate them to pursue graduate level studies. The students will leverage considerable research in progress at CAC, and will gain experience programming in both high level languages (Matlab, MPI, OpenMP) and hardware descriptive languages (Verilog). Students will participate in prototyping their work on actual hardware using Field Programmable Gate Arrays (FPGA).

Expectations: Each REU participant will have two mentors; one of the PIs (Akoglu, Hariri) and one graduate research assistant. The undergraduate researches are expected to participate in the semi-annual CAC Industry Advisor Board Meetings through poster presentations to showcase their work to CAC faculty and industry members and receive formal feedback. We plan to have each REU student involved in authoring or co-authoring a research paper and have active involvement in writing the paper and/or individual technical reports.

Please contact Dr. Akoglu (akoglu@ece.arizona.edu) with the subject line “NSF CAC REU” and include your resume highlighting your course projects, programming experience, and research interests (hardware design, programming, parallel computing)