

RA Position Available in Reconfigurable Computing Lab

Project Title: Self-Configurable Architecture for Reusable Space Systems (SCARS)

Supported by: NASA

Objective: An autonomous self-configuring architecture transparent to applications has the potential for responding to reliability, robustness and versatility requirements of spacecraft missions. A modular design with reconfigurable space mission concept (formation flying, distributed sensor networks, space fleet, and constellation of satellites) will address these requirements by coordinated adaptive behavior, fault-tolerance and optimized computing/communication capabilities. Our goal is to develop a self-configurable spacecraft architecture in which individual, modular components/subsystems:

- coordinate their actions for broader range of objectives hence go beyond mission-specific requirements
- adapt to changes in mission objectives over time and optimize computing and communication capability
- respond to hardware/software anomalies automatically with self-healing action

Our objective is to demonstrate the advantages and feasibility of such an architecture based on scenarios that will quantify the benefits.

Required

Background: FPGA based design experience

Programming Skills: Excellent in VHDL for RTL Synthesis

Partial configuration knowledge is a plus

For further information please contact Ali Akoglu along with your resume.

Electrical and Computer Engineering Department, 356B
Phone: (520)626-5149
akoglu@ece.arizona.edu
www.ece.arizona.edu/~akoglu