Abstract — The Future FPGA Clearinghouse is introduced to the research community. The Future FPGA Clearinghouse provides an opportunity for researchers in academia and industry to contribute research products, ranging from research studies to device models and designs, which they wish to offer to the community. The Future FPGA Clearinghouse would be most interest to researchers working on topics of reconfigurable computing (spanning the system stack at most levels from fabrics to architectures to tools, and those working in emerging post-CMOS devices, as well as More-Than-Moore (MTM) approaches to future reconfigurable systems.

Keywords — Field Programmable Gate Arrays (FPGAs), reconfigurable computing; post-CMOS architectures; energy-aware processor architecture; logic-in-memory; resilient computing; spintronics.

1.0 Introduction

The Future FPGA Clearinghouse is a web-based compendium of academia and industry advancing future Field Programmable Gate Array (FPGA) device technologies and their applications. The Clearinghouse links to research results, device models, simulation scripts within the broader research areas. These include FPGA-capable Storage Cell Replacement Technologies, various Heterogeneous Technology Configurable Fabrics (HTCFs), and related research to advance reconfigurable fabrics. As depicted in Figure 1, the scope of topics in Future FPGA Clearinghouse spans:

- Making publically-accessible various Special Issue / Keynote / Videos resources as educational materials for those researching related topics [1]-[4],
- Introducing design concepts for Future Reconfigurable Fabrics [5]-[7].
- Sharing Emerging Logic Device approaches for FPGAs: [8]-[10],
- Developing new Resiliency and Energy Awareness strategies for FPGAs [11]-[13],
- Supporting Autonomous Adaptation in reconfigurable fabrics: [14]-[16], and
- Other topics of interest as the effort proceeds.

2.0 Hub/Spoke Site Structure

The Future FPGA Clearinghouse provides a hub site and supports requests of spoke sites. Content can be hosted on the hub site, spoke sites, or both as appropriate. Content includes both technical work products, as well as open source device and circuit models. This provides a means to share results which can be the starting point for others working in the field, without needing to “re-invent the wheel” each time.

3.0 Invitation for Participation and Conclusion

In conclusion, the vision for the Future FPGA Clearinghouse is to provide a forum and focus for the community work on future reconfigurable fabrics. Researchers are invited to:

- Visit Hub Site: for information from participating researchers at [http://cal.ucf.edu/FFPGAC](http://cal.ucf.edu/FFPGAC)
- Post their content to the compendium: contact ronald.demara@ucf.edu for procedure.
- Participate as a spoke site: e-mail me your website URL to crosslink: ronald.demara@ucf.edu

References


