

Ann Gordon-Ross – Associate Professor

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Member of the NSF Center for Space, High-Performance, and Resilient Computing (SHREC) at UF; <http://www.chrec.org>

Research Interests

Research interests include computer engineering, low-power design, embedded systems, reconfigurable computing, platform design, aerospace system, fault tolerance, dynamic optimizations, hardware design, real-time systems, computer architecture, and multi-core platforms.

Education

University of California, Riverside June 2000 to June 2007

- Ph.D. in Computer Science and Engineering

University of California, Riverside September 1996 to June 2000

- Bachelor of Science, Computer Science and Engineering
- Graduated Magna Cum Laude
- Graduated top female student in the College of Engineering

Publications

87 Conference Publications:

- **Using FPGAs as Microservices: Technology, Challenges and Case Study.** D. Ojika, A. Gordon-Ross, H. Lam, B. Patel, G. Kaul, and J. Strayer. *Workshop on Big Data Benchmarks performance, Optimization and Emerging Hardware (BPOE-9)*
- **Instruction Set Architecture Impact on Design Space Subsetting for Configurable Systems.** M. H. Alsafrajani and A. Gordon-Ross. *IEEE International Conference on Control Science and Systems Engineering (ICCSSE), August 2017.*
- **Overlay-based Side-channel Countermeasures: A Case Study on Correlated Noise Generation.** A. Baylis, G. Stitt, and A. Gordon-Ross. *IEEE International Midwest Symposium on Circuits and Systems (MWSCAS), August 2017.*
- **Accelerating High-energy Physics Exploration with Deep Learning.** D. Ojika, D. Acosta, A. Gordon-Ross, A. Carnes, and S. Gleyzer. *Proceedings of the Practice and Experience in Advanced Research Computing 2017 on Sustainability, Success and Impact (PEARC), July 2017.*
- **Comparative Analysis of Parallel OPIR Compression on Space Processors.** A. Ho, E. Shea, A. George, and A. Gordon-Ross. *IEEE Aerospace Conference*, March 2017.
- **Hybrid, Adaptive, and Reconfigurable Fault Tolerance.** C. Wilson, S. Sabogal, A. George, and A. Gordon-Ross. *IEEE Aerospace Conference*, March 2017.
- **A Comparison-Free Sorting Algorithm on CPUs.** S. Abdel-hafeez, A. Gordon-Ross, and S. Abubaker. *International Conference on Applied Computing (AC)*, Oct 2016.
- **Phase-based Dynamic Instruction Window Optimization for Embedded Systems.** T. Adegbija and A. Gordon-Ross. *IEEE Computer Society Annual Symposium on VLSI (ISVLSI)*, July 2016.
- **An Automated Hardware/Software Co-Design Flow for Partially Reconfigurable FPGAs.** S. Yousuf and A. Gordon-Ross. *IEEE Computer Society Annual Symposium on VLSI (ISVLSI)*, July 2016. *Invited Paper*
- **Postponing Wearout Failures in Chip Multiprocessors Using Thermal Management and Thread Migration.** E. Kashefi, H. Zarandi, and A. Gordon-Ross. *International Symposium on Reconfigurable Communication-centric Systems-on-Chip (ReCoSoC)*, June 2016.
- **Quality of Service-Aware, Scalable Cache Tuning Algorithm in Consumer-based Embedded Devices.** M. H. Alsafrajani and A. Gordon-Ross. *ACM Great Lakes Symposium on VLSI (GLSVLSI)*, May 2016.
- **Configuration Prefetching and Reuse for Preemptive Hardware Multitasking on Partially Reconfigurable FPGAs.** A. Morales, R. Kumar, and A. Gordon-Ross. *IEEE/ACM Design, Automation and Test in Europe (DATE), March 2016.*
- **Improving Compression Ratios for High Bit-Depth Grayscale Video Formats.** A. Ho, A. George, and A. Gordon-Ross. *IEEE Aerospace Conference*, March 2016.
- **Enabling Right-Provisioned Microprocessor Architectures For The Internet Of Things.** T. Adegbija, A. Rogacs, C. Patel, and A. Gordon-Ross. *ASME 2015 International Mechanical Engineering Congress & Exposition (IMECE), Nov. 2015.*
- **An Automated High-level Design Framework for Partially Reconfigurable FPGAs.** R. Kumar and A. Gordon-Ross. *IEEE Reconfigurable Architectures Workshop (RAW), May 2015.*
- **Partial Region and Bitstream Cost Models for Hardware Multitasking on Partially Reconfigurable FPGAs.** A. Morales-Villanueva and A. Gordon-Ross. *IEEE Reconfigurable Architectures Workshop (RAW), May 2015.*
- **Phase-based Cache Locking for Embedded Systems.** T. Adegbija and A. Gordon-Ross. *ACM Great Lakes Symposium on VLSI (GLSVLSI), May 2015.*
- **Evaluating Internal and External Memory Effects for Aerospace Computing Systems.** N. Wulf, A. D. George, and A. Gordon-Ross. *IEEE Aerospace Conference*, March 2015.
- **Analysis of Cache Tuner Architectural Layouts for Multicore Embedded Systems.** T. Adegbija, M. Rawlins, and A. Gordon-Ross. *IEEE International Performance Computing and Communications Conference (IPCCC), Dec 2014.*
- **A Comparison-Free Sorting Algorithm.** S. Abdel-hafeez and A. Gordon-Ross. *IEEE International SoC Design Conference (ISOCC), Nov 2014.*
- **Minimum Effort Design Space Subsetting for Configurable Caches** M. H. Alsafrajani and A. Gordon-Ross. *12th IEEE International Conference on Embedded and Ubiquitous Computing (EUC), August 2014.*
- **Dynamic Scheduling for Reduced Energy in Configuration-Subsetted Heterogeneous Multicore Systems.** M. H. Alsafrajani and A. Gordon-Ross. *12th IEEE International Conference on Embedded and Ubiquitous Computing (EUC), August 2014.*
- **Dynamic Phase-based Optimization of Embedded Systems.** T. Adegbija and A. Gordon-Ross. *IEEE Computer Society Annual Symposium on VLSI (ISVLSI), July 2014 - PhD Forum. Received best paper award*
- **Thermal-aware Phase-based Tuning of Embedded Systems.** T. Adegbija and A. Gordon-Ross. *ACM Great Lakes Symposium on VLSI (GLSVLSI), May 2014.*
- **A Framework to Analyze Processor Architectures for Next-Generation On-Board Space Computing.** T. M. Lovelley, D. Bryan, K. Cheng, R. Kreymin, A. D. George, A. Gordon-Ross, and G. Mounce. *IEEE Aerospace Conference*, March 2014.
- **A Proactive Approach to Enhancing Student and Faculty Diversity.** A. Gordon-Ross. *ECE Source*, February 2014. *Invited Article*
- **Energy-efficient Phase-based Cache Tuning for Multimedia Applications in Embedded Systems.** T. Adegbija and A. Gordon-Ross. *IEEE Consumer Communications and Networking Conference (CCNC), Jan 2014*
- **Exploiting Dynamic Phase Distance Mapping for Phase-based Tuning of Embedded Systems** T. Adegbija and A. Gordon-Ross. *IEEE International Conference of Computer Design (ICCD), October 2013.*
- **Analytical Modeling of Partially Shared Caches in Embedded CMPs.** W. Zang and A. Gordon-Ross. *IARIA International Conference on Mobile Ubiquitous Computing, Systems, Services and Technologies (UBICOMM'13), Porto, Portugal, September 2013.*
- **Exploring the Tradeoffs of Configurability and Heterogeneity in Multicore Embedded Systems.** T. Adegbija and A. Gordon-Ross. *IARIA International Conference on Mobile Ubiquitous Computing, Systems, Services and Technologies (UBICOMM'13), Porto, Portugal, September 2013.*
- **On-chip Context Save and Restore of Hardware Tasks on Partially Reconfigurable FPGAs.** A. Morales-Villanueva and A. Gordon-Ross. *IEEE Symposium on Field-Programmable Custom Computing Machines (FCCM), April 2013.*
- **PRML: A Modeling Language for Rapid Design Exploration of Partially Reconfigurable FPGAs.** R. Kumar and A. Gordon-Ross. *IEEE Symposium on Field-Programmable Custom Computing Machines (FCCM), April 2013.*
- **Accuracy-Guided Runtime Adaptive Profiling Optimization of Wireless Sensor Networks.** L. Ding, A. Lizarraga, S. Lysecky, R. Lysecky and A. Gordon-Ross. *IEEE International Conference and Workshops on the Engineering of Computer Based Systems (ECBS), April 2013.*

- **HTR: On-chip Hardware Task Relocation for Partially Reconfigurable FPGAs.** A. Morales-Villanueva and A. Gordon-Ross. *International Symposium on Applied Reconfigurable Computing (ARC)*, March 2013.
- **Parallelized Benchmark-Driven Performance Evaluation of SMPs and Tiled Multi-Core Architectures for Embedded Systems.** A. Munir, A. Gordon-Ross, and S. Ranka. *IEEE International Performance Computing and Communications Conference (IPCCC)*, Dec 2012.
- **A Double Data Rate 8T-Cell SRAM Architecture for Systems-on-Chip.** S. Abdel-Hafeez, M. Shatnawi, and A. Gordon-Ross. *IEEE International Symposium on System-on-Chip (SoC)*, October 2012.
- **Dynamic Phase-based Tuning for Embedded Systems Using Phase Distance Mapping.** T. Adegbija, A. Gordon-Ross, and A. Munir. *IEEE International Conference of Computer Design (ICCD)*, October 2012.
- **A Single-Pass Cache Simulation Methodology for Two-level Unified Caches.** W. Zang and A. Gordon-Ross. *IEEE International Symposium on Performance Analysis of Systems and Software (ISPASS)*, April 2012.
- **A Framework to Analyze, Compare, and Optimize High-Performance, On-Board Processing Systems.** N. Wulf, A. D. George, and A. Gordon-Ross. *IEEE Aerospace Conference*, March 2012.
- **Energy Budgeting for CubeSats with an Integrated FPGA.** S. Arnold, R. Nuzzaci, and A. Gordon-Ross. *IEEE Aerospace Conference*, March 2012.
- **An Application Classification Guided Cache Tuning Heuristic for Multi-core Architectures.** M. Rawlins and A. Gordon-Ross. *Asia and South Pacific Design Automation Conference (ASP-DAC)*, Jan 2012.
- **Online Algorithms for Wireless Sensor Networks Dynamic Optimization.** A. Munir, A. Gordon-Ross, S. Lysecky, and R. Lysecky. *IEEE Consumer Communications and Networking Conference (CCNC)*, Jan 2012.
- **Partially Reconfigurable System-on-Chips for Adaptive Fault Tolerance.** S. Yousuf and A. Gordon-Ross. *IEEE 2011 International Conference on Field-Programmable Technology (FPT)*, December 2011.
- **Hardware Module Reuse and Runtime Assembly for Dynamic Management of Reconfigurable Resources.** A. Jara-Berrocal and A. Gordon-Ross. *IEEE 2011 International Conference on Field-Programmable Technology (FPT)*, December 2011.
- **Formulation-level Design Space Exploration for Partially Reconfigurable FPGAs.** R. Kumar and A. Gordon-Ross. *IEEE 2011 International Conference on Field-Programmable Technology (FPT)*, December 2011.
- **Disruptive Tolerant Networking Performance for Constellations of Earth Observing Small Satellites.** P. Muri, J. McNair, J. Antoon, A. Gordon-Ross, K. Cason, and N. Fitz-Coy. *Military Communications Conference (MILCOM)*, November 2011.
- **CPACT - The Conditional Parameter Adjustment Cache Tuner for Dual-Core Architectures.** M. Rawlins and A. Gordon-Ross. *IEEE International Conference of Computer Design (ICCD)*, October 2011.
- **A Queueing Theoretic Approach for Performance Evaluation of Low-Power Multi-core Embedded Systems.** A. Munir, A. Gordon-Ross, and S. Ranka. *IEEE International Conference of Computer Design (ICCD)*, October 2011.
- **An Integrated Development Toolset and Implementation Methodology for Partially Reconfigurable System-on-Chips.** A. Jara-Berrocal and A. Gordon-Ross. *IEEE International Conference on Application-specific Systems, Architectures and Processors (ASAP)*, September 2011.
- **Markov Modeling of Fault-Tolerant Wireless Sensor Networks.** A. Munir and A. Gordon-Ross. *IEEE International Conference on Computer Communications and Networks (ICCCN 2011)*, August 2011.
- **SCIPS: An Emulation Methodology for Fault Injection in Processor Caches.** N. Wulf, G. Cieslewski, A. Gordon-Ross, and A. D. George. *IEEE Aerospace Conference*, March 2011.
- **On the Interplay of Loop Caching, Code Compression, and Cache Configuration.** M. Rawlins and A. Gordon-Ross. *Asia and South Pacific Design Automation Conference (ASP-DAC)*, Jan 2011.
- **T-SPaCS - A Two-Level Single-Pass Cache Simulation Methodology.** W. Zang and A. Gordon-Ross. *Asia and South Pacific Design Automation Conference (ASP-DAC)*, Jan 2011.
- **A Lightweight Dynamic Optimization Methodology for Wireless Sensor Networks.** A. Munir, A. Gordon-Ross, S. Lysecky, and R. Lysecky. *IEEE International Conference on Wireless and Mobile Computing, Networking and Communications (WiMob'2010)*, October 2010.
- **A One-Shot Dynamic Optimization Methodology for Wireless Sensor Networks.** A. Munir, A. Gordon-Ross, S. Lysecky, and R. Lysecky. *IARIA International Conference on Mobile Ubiquitous Computing, Systems, Services and Technologies (UBICOMM'10)*, Florence, Italy, October 2010. **Received Best Paper Award**

- **Seamless Hardware Module Swapping for Partially Reconfigurable Stream Processing Systems.** A. Jara-Berrocal, J. Antoon, and A. Gordon-Ross. *Europa Jupiter System Mission 4th Instrument Workshop (EJSM)*, July 2010.
- **VAPRES: A Customizable and Flexible Base Architecture for Partially Reconfigurable Systems.** A. Gordon-Ross and A. Jara-Berrocal. *The International Conference on Engineering of Reconfigurable Systems and Algorithms (ERSA)*, July 2010. **Invited Paper**
- **DAPR: Design Automation for Partially Reconfigurable FPGAs.** S. Yousuf and A. Gordon-Ross. *The International Conference on Engineering of Reconfigurable Systems and Algorithms (ERSA)*, July 2010.
- **Transaction-Level Modeling for Sensor Networks Using SystemC.** J. Hiner, A. Shenoy, R. Lysecky, S. Lysecky, and A. Gordon-Ross. *IEEE International Conference on Sensor Networks, Ubiquitous, and Trustworthy Computing (SUTC)*, June 2010.
- **Lightweight Runtime Control Flow Analysis for Adaptive Loop Caching.** M. Rawlins and A. Gordon-Ross. *ACM Great Lakes Symposium on VLSI (GLSVLSI)*, May 2010. **Received best paper award**
- **VAPRES: A Virtual Architecture for Partially Reconfigurable Embedded Systems.** A. Jara-Berrocal and A. Gordon-Ross. *IEEE/ACM Design, Automation and Test in Europe (DATE)*, March 2010.
- **Runtime Temporal Partitioning Assembly to Reduce FPGA Reconfiguration Time.** A. Jara-Berrocal and A. Gordon-Ross. *International Conference on Reconfigurable Computing and FPGAs (ReConFig)*, December 2009.
- **An MDP-based Application Oriented Optimal Policy for Wireless Sensor Networks.** A. Munir and A. Gordon-Ross. *IEEE/ACM International Conference on Hardware-Software Codesign and System Synthesis (CODES+ISSS)*, October 2009.
- **Run-Time FPGA Partial Reconfiguration for Image Processing Applications.** S. Yousuf and A. Gordon-Ross. *Military and Aerospace Programmable Logic Devices (MAPLD)*, August 2009.
- **MACS: A Minimal Adaptive Routing Circuit-Switched Architecture for Scalable and Parametric NoCs.** R. Kumar and A. Gordon-Ross. *IEEE International Conference on Field-Programmable Logic and Applications (FPL)*, August 2009.
- **SIP-based IMS Registration Analysis for WiMax-3G Interworking Architectures.** A. Munir and A. Gordon-Ross. *IARIA International Conference on Networking and Services (ICNS 2009)*, April 2009.
- **Bitstream Relocation with Local Clock Domains for Partially Reconfigurable FPGAs.** A. Flynn, A. Gordon-Ross, and A.D. George. *IEEE/ACM Design, Automation and Test in Europe (DATE)*, April 2009.
- **SCORES: A Scalable and Parametric Streams-Based Communication Architecture for Modular Reconfigurable Systems.** A. Jara-Berrocal and A. Gordon-Ross. *IEEE/ACM Design, Automation and Test in Europe (DATE)*, April 2009.
- **Exploiting Partially Reconfigurable FPGAs for Situation-Based Reconfiguration in Wireless Sensor Networks.** R. Garcia, A. Gordon-Ross, and A. George. *IEEE Symposium on Field-Programmable Custom Computing Machines (FCCM)*, April 2009.
- **SACR: Scheduling-Aware Cache Reconfiguration for Real-Time Embedded Systems.** W. Wang, P. Mishra, and A. Gordon-Ross. *IEEE International Conference on VLSI Design*, Jan 2009.
- **Real-Time Performance Analysis of Adaptive Link Rate.** B. Zhang, K. Sabhanatarajan, A. Gordon-Ross, A. George. *IEEE Conference on Local Computer Networks (LCN)*, Oct 2008.
- **A Resource Efficient Content Inspection System for Next Generation Smart NICs.** K. Sabhanatarajan and A. Gordon-Ross. *IEEE International Conference on Computer Design*, Oct. 2008.
- **FPGA Design Framework for Partial Run-Time Reconfiguration.** C. Conger, A. Gordon-Ross, A. George. *The International Conference on Engineering of Reconfigurable Systems and Algorithms (ERSA)*, July 2008.
- **Phase-Based Cache Reconfiguration for a Highly-Configurable Two-Level Cache Hierarchy.** A. Gordon-Ross, J. Lau, and B. Calder. *ACM Great Lakes Symposium on VLSI (GLSVLSI)*, May 2008.
- **A Table-based Method for Single-Pass Cache Optimization.** P. Viana, A. Gordon-Ross, E. Baros, F. Vahid. *ACM Great Lakes Symposium on VLSI (GLSVLSI)*, May 2008.
- **Smart-NICs: Power Proxying for Reduced Power Consumption in Network Edge Devices.** K. Sabhanatarajan, A. Gordon-Ross, M. Oden, M. Navada, and A. George. *IEEE Computer Society Annual Symposium on VLSI (ISVLSI)*, April 2008.
- **A Self-Tuning Configurable Cache.** A. Gordon-Ross and F. Vahid. *IEEE Design Automation Conference (DAC)*, July 2007.

- **A One-Shot Configurable-Cache Tuner for Improved Energy and Performance.** A. Gordon-Ross, P. Viana, F. Vahid, W. Najjar, and E. Barros. *IEEE/ACM Design, Automation and Test in Europe (DATE)*, April 2007.
- **Configurable Cache Subsetting for Fast Cache Tuning.** P. Viana, A. Gordon-Ross, E. Keogh, E. Barros, and F. Vahid. *IEEE Design Automation Conference (DAC)*, July 2006.
- **Fast Configurable-Cache Tuning with a Unified Second-Level Cache.** A. Gordon-Ross, F. Vahid, and N. Dutt. *IEEE/ACM International Symposium on Low Power Electronics and Design*, August 2005.
- **A First Look at the Interplay of Code Reordering and Configurable Caches.** A. Gordon-Ross, F. Vahid, and N. Dutt. *ACM Great Lakes Symposium on VLSI (GLSVLSI)* April 2005.
- **Automatic Tuning of Two-Level Caches to Embedded Applications.** A. Gordon-Ross, F. Vahid, and N. Dutt. *IEEE/ACM Design, Design Automation and Test in Europe*, February 2004.
- **Frequent Loop Detection Using Non-Intrusive On-Chip Hardware.** A. Gordon-Ross and F. Vahid. *IEEE/ACM International Conference on Compilers, Architectures and Synthesis of Embedded Systems*, October 2003.
- **Dynamic Loop Caching Meets Preloaded Loop Caching -- A Hybrid Approach** A. Gordon-Ross and F. Vahid. *IEEE International Conference on Computer Design*, September 2002.
- **A Self-Optimizing Embedded Microprocessor using a Loop Table for Low Power.** F. Vahid and A. Gordon-Ross. *IEEE/ACM International Symposium on Low Power Electronics and Design*, August 2001.

40 Journal Publications:

- **TaPT: Temperature-Aware Dynamic Cache Optimization for Embedded Systems.** T. Adegbiya and A. Gordon-Ross. *MDPI Computers Journal Special Issue on Multi-Core Systems-On-Chips Design and Optimization*, December 2017.
- **PhLock: A Cache Energy Saving Technique Using Phase-based Cache Locking.** T. Adegbiya and A. Gordon-Ross. *IEEE Transactions on Very Large Scale Integration Systems (TVLSI)*, October 2017
- **Optimizing FPGA Performance, Power, and Dependability with Linear Programming.** N. Wulf, A. George, and A. Gordon-Ross. *ACM Transactions on Reconfigurable Technology and Systems (TRETs)*. July 2017.
- **Microprocessor Optimizations for the Internet of Things: A Survey.** T. Adegbiya, A. Rogacs, C. Patel, and A. Gordon-Ross. *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TECS) Volume: 37, Issue 1*. June 2017. (Special issue)
- **An Efficient O(N) Comparison-Free Sorting Algorithm.** S. Abdel-hafeez and A. Gordon-Ross. *IEEE Transactions on Very Large Scale Integration Systems (TVLSI)*, Feb 2017.
- **A Framework for Evaluating and Optimizing FPGA-Based SoCs for Aerospace Computing.** N. Wulf, A. George, and A. Gordon-Ross. *ACM Transactions on Reconfigurable Technology and Systems (TRETs)*, Volume 10 Issue 1, Dec 2016.
- **Application-Specific Customization of Dynamic Profiling Mechanisms for Sensor Networks.** L. Ding, A. Lizarraga, A. Shenoy, A. Gordon-Ross, S. Lysecky, and R. Lysecky. *IEEE Open Access*, Volume: 3 Issue: 1, pages: 1-20, Dec 2015.
- **CaPPS: Cache Partitioning with Partial Sharing for Multi-core Embedded Systems.** W. Zang and A. Gordon-Ross. *Design Automation for Embedded Systems (DAEM)*, pp 1-28, Nov 2015.
- **Modeling and Analysis of Fault Detection and Fault Tolerance in Wireless Sensor Networks.** A. Munir, J. Antoon, and A. Gordon-Ross. *ACM Transactions on Embedded Computing Systems (TECS) Volume 14 Issue 1*, January 2015.
- **MACS: A Highly Customizable Low-latency Communication Architecture.** R. Kumar and A. Gordon-Ross. *IEEE Transactions on Parallel and Distributed Systems (TPDS)*, Jan 2015.
- **Multi-bit Fault Injection for FPGAs with SPFL.** G. Cieslewski, A. Jacobs, A. D. George, and A. Gordon-Ross. *Journal of Aerospace Information Systems (JAIS)*, October 2014, Vol. 11, No. 10: pp. 738-750.
- **Multi-core Embedded Wireless Sensor Networks: Architecture and Applications** A. Munir, A. Gordon-Ross, and S. Ranka. *IEEE Transactions on Parallel and Distributed Systems (TPDS)*, vol. 25, no. 6, pp. 1553-1562, June 2014.
- **Phase distance mapping: a phase-based cache tuning methodology for embedded systems.** T. Adegbiya, A. Gordon-Ross, and A. Munir. *Design Automation for Embedded Systems (DAEM)*, January 2014.

- **A Queueing Theoretic Approach for Performance Evaluation of Low-Power Multi-Core Embedded Systems.** A. Munir, A. Gordon-Ross, S. Ranka, and F. Koushanfar. *Elsevier Journal of Parallel and Distributed Computing (JPDC)*, vol. 74, no. 1, pp. 1872--1890, January 2014.
- **Dynamic Profiling and Fuzzy Logic Based Optimization of Sensor Networks Platforms.** A. Lizarraga, R. Lysecky, S. Lysecky, and A. Gordon-Ross. *ACM Transactions on Embedded Computing Systems (TECS)*, Volume 13 Issue 3, December 2013.
- **Scalable Digital CMOS Comparator Using a Parallel Prefix Tree.** S. Abdel-Hafeez, A. Gordon-Ross, and B. Parhami. *IEEE Transactions on Very Large Scale Integration Systems (TVLSI)*, Volume 21 Issue 11, November 2013.
- **A Survey on Cache Tuning from a Power/Energy Perspective.** W. Zang and A. Gordon-Ross. *ACM Computing Surveys*. Volume 45, Issue 3, Sept 2013.
- **A Cache Tuning Heuristic for Multi-core Architectures.** M. Rawlins and A. Gordon-Ross. *IEEE Transactions on Computers*, Special Issue on Adaptive Hardware and Systems, Vol. 62, Issue 8, Aug. 2013.
- **A Lightweight Dynamic Optimization Methodology and Application Metrics Estimation Model for Wireless Sensor Networks.** A. Munir, A. Gordon-Ross, S. Lysecky, and R. Lysecky. *Sustainable Computing: Informatics and Systems (SUSCOM)*, Elsevier, Volume 3 Issue 2, June 2013.
- **High-Performance Optimizations on Tiled Many-Core Embedded Systems: A Matrix Multiplication Case Study.** A. Munir, F. Koushanfar, A. Gordon-Ross, and S. Ranka. *Journal of Supercomputing*, Springerlink, DOI 10.1007/s11227-013-0916-9. Published online April 2013.
- **Adaptive Loop Caching Using Lightweight Runtime Control Flow Analysis.** M. Rawlins and A. Gordon-Ross. *ACM Transactions on Embedded Computing Systems (TECS)*, Volume 12 Issue 1s, March 2013.
- **HTR: On-Chip Hardware Task Relocation for Partially Reconfigurable FPGAs.** A. Morales-Villanueva and A. Gordon-Ross. *Lecture Notes in Computer Science*, Vol. 7806: Reconfigurable Computing: Architectures, Tools and Applications by P. Brisk, J. Gabriel Figueiredo Coutinho, and P. C. Diniz, SpringerLink, DOI 10.1007/978-3-642-36812-7_18, Pages 185 - 196. March 2013.
- **User Datagram and Bundle Protocol for Distributed Satellite Topologies.** P. Muri, J. McNair, J. Antoon, A. Gordon-Ross, K. Cason, and N. Fitz-Coy, *Journal of Wireless Networks and Communications*, vol 3, no 3, pp. 19-28, March 2013.
- **T-SPaCS -- A Two-Level Single-Pass Cache Simulation Methodology.** W. Zang and A. Gordon-Ross. *IEEE Transactions on Computers*. Vol. 62, Issue 2. Pages 390 - 403, Feb 2013.
- **Reconfigurable Fault Tolerance: A Comprehensive Framework for Reliable and Adaptive FPGA-Based Space Computing.** A. Jacobs, G. Cieslewski, A. D. George, A. Gordon-Ross, and H. Lam. *ACM Transactions on Reconfigurable Technology and Systems (TRETs)*, Volume 5, Issue 4, Dec 2012.
- **Combining Code Reordering and Cache Configuration.** A. Gordon-Ross, F. Vahid, and N. Dutt. *ACM Transactions on Embedded Computing Systems (TECS)*, Volume 11, Issue 4, Dec 2012.
- **ATLeS-SN: A Modular Simulator for Wireless Sensor Networks.** A. Lizarraga, L. Ding, J. Hiner, R. Lysecky, S. Lysecky, and A. Gordon-Ross. *Design Automation for Embedded Systems (DAEM)*, November 2012, Volume 16, Issue 4, pp 265-291.
- **Dynamic Cache Reconfiguration for Soft Real-Time Systems.** W. Wang, P. Mishra, and A. Gordon-Ross. *ACM Transactions on Embedded Computing Systems (TECS)*, Volume 11, Issue 2, July 2012.
- **A One-Shot Dynamic Optimization Methodology and Application Metrics Estimation Model for Wireless Sensor Networks.** A. Munir, A. Gordon-Ross, S. Lysecky, and R. Lysecky. *IARIA Journal of Advances in Networks and Services (IJANS)*, vol. 4, no. 3 & 4, pp. 278-291, April 2012.
- **An MDP-based Dynamic Optimization Methodology for Wireless Sensor Networks.** A. Munir and A. Gordon-Ross. *IEEE Transactions on Parallel and Distributed Systems (TPDS)*, Volume 23, Issue 4, April 2012.
- **High-Performance Energy-Efficient Multicore Embedded Computing.** A. Munir, S. Ranka, and A. Gordon-Ross. *IEEE Transactions on Parallel and Distributed Systems (TPDS)*, Volume 23, Issue 4, April 2012.
- **A Digital CMOS Parallel Counter Architecture Based on State Look-Ahead Logic.** S. Abdel-Hafeez and A. Gordon-Ross. *IEEE Transactions on Very Large Scale Integration Systems (TVLSI)*, July 2011.
- **A Gigahertz Digital CMOS Divide-by-N Frequency Divider Based on a State Look-Ahead Structure.** S. Abdel-Hafeez and A. Gordon-Ross. *Springerlink Circuits, Systems, and Signal Processing (CSSP): Volume 30, Issue 6 (2011), Page 1549-1572.*

- **A Shadow Dynamic Finite State Machine for Branch Prediction: An alternative for the 2-bit Saturating Counter.** S. Abdel-Hafeez, A. Gordon-Ross, A. Albusul, A. Shatnawi, and S. Harb. *ACM International Journal of Computing and Informatics (Informatica)*, Volume 35, Number 1, February 2011.
- **SIP-based IMS Signaling Analysis for WiMax-3G Interworking Architectures.** A. Munir and A. Gordon-Ross. *IEEE Transactions on Mobile Computing*, vol. 9, no. 5, pp. 733-750, May 2010.
- **Evaluation of Dynamic Profiling Methodologies for Optimization of Sensor Networks.** A. Shenoy, J. Hiner, S. Lysecky, R. Lysecky, and A. Gordon-Ross. *IEEE Embedded Systems Letters (ESL)*, March 2010.
- **Fast Configurable-Cache Tuning With a Unified Second-Level Cache.** A. Gordon-Ross, F. Vahid, and N. Dutt. *IEEE Transactions on Very Large Scale Integration (VLSI) Systems*. Vol. 17, No. 1, Jan 2009.
- **Frequent Loop Detection Using Non-Intrusive On-Chip Hardware.** A. Gordon-Ross and F. Vahid. *IEEE Transactions on Computing - Best of the 2003 MICRO and CASES conferences special issue. Special Issue-Embedded Systems, Microarchitecture, and Compilation Techniques, in Memory of B. Ramakrishna (Bob) Rau, Oct. 2005*
- **Tiny Instruction Caches For Low Power Embedded Systems.** A. Gordon-Ross, S. Cotterell, and F. Vahid. *ACM Transactions on Embedded Computing Systems*, Vol. 2, Issue 4, Nov. 2003
- **Exploiting Fixed Programs in Embedded Systems: A Loop Cache Example.** A. Gordon-Ross, S. Cotterell, and F. Vahid. *IEEE Computer Architecture Letters*, Vol 1, January 2002.

5 Book Chapters:

- **Dynamic Profiling and Optimization Methodologies for Sensor Networks.** A. Gordon-Ross, S. Lysecky, and R. Lysecky. *Wireless Sensors Technologies*, ISBN: 978-1466562721, CRC Press, Sept. 2013.
- **Modeling of Scalable Embedded Systems** A. Munir, S. Ranka, and A. Gordon-Ross. *Chapter 33 in Scalable Computing and Communications: Theory and Practice*. ISBN: 978-1-1181-6265-1. Wiley-IEEE Computer Society Press, Jan 2013.
- **Low Energy Instruction Cache Optimization Techniques for Embedded Systems.** A. Gordon-Ross and M. Rawlins. *Handbook of Energy-Aware and Green Computing*. Chapman and Hall/CRC, ISBN 9781466501164, January 2012.
- **Optimization Approaches in Wireless Sensor Networks.** A. Munir and A. Gordon-Ross. *CH 13 in Sustainable Wireless Sensor Networks*, Winston Seah and Yen Kheng Tan (Ed.), ISBN: 978-953-307-297-5, 2010, InTech.
- **Tuning caches to applications for low-energy embedded systems.** A. Gordon-Ross, C. Zhang, F. Vahid, and N. Dutt. *Chapter 6 in Ultra Low-Power Electronics and Design - Kluwer Academic Pub*, June 2004.

1 Book:

- **Modeling and Optimization of Parallel and Distributed Embedded Systems.** A. Munir, A. Gordon-Ross, and S. Ranka. ISBN: 978-1-119-08641-3, Wiley-IEEE Press, 400 pages, January 2016.

Professional Activities

- **Program Committees - Steering/Advisory Committee** - IARIA International Conference on Mobile Ubiquitous Computing, Systems, Services and Technologies (UBICOMM); **Vice Program Chair** - IEEE Reconfigurable Architectures Workshop (RAW), 2017; **Track Co-chair** - IEEE International Symposium on VLSI (ISVLSI), 2016-2017; **Track Co-Chair** - IEEE International Symposium on VLSI (ISVLSI), 2017; IEEE International System-on-Chip Conference (SOCC), 2016; **Research Chair** - IARIA International Conference on Mobile Ubiquitous Computing, Systems, Services and Technologies (UBICOMM), November 2011
- **Technical Program Committee** - IEEE International Conference on Application-specific Systems, Architectures and Processors (ASAP) 2013-2017; IEEE/ACM International Conference on Compilers, Architecture, and Synthesis for Embedded Systems (CASES) 2008-2017; IEEE/ACM International Conference on Hardware/Software Sign and System Synthesis (CODES+ISSS) 2008-2017; IEEE Symposium on Field-Programmable Custom Computing Machines (FCCM) 2010-2011, 2014-2017; International Conference on Field Programmable Logic and Applications (FPL), 2012-2017; IEEE International Conference on Field-Programmable Technology (FPT), 2011-2017; ACM Great Lakes Symposium on VLSI (GLSVLSI), 2008-2011, 2015-2017; IEEE International Conference on Computer Design (ICCD), 2015-2017; IEEE International Parallel & Distributed Processing Symposium (IPDPS), 2017; IEEE/ACM International

Symposium on Computer Architecture (ISCA) 2017; IEEE International Symposium on Low Power Electronics and Design (ISLPED), 2012-2017; IEEE International Symposium on VLSI (ISVLSI) 2009-2010, 2016-2017; IEEE International Conference on ReConfigurable Computing and FPGAs (ReConFig), 2013-2017; IARIA International Conference on Mobile Ubiquitous Computing, Systems, Services and Technologies (UBICOMM), 2012-2017; Workshop on Highly-Reliable Power-Efficient Embedded Designs (HARSH) 2013-2014, 2016; IEEE International System-on-Chip Conference (SOCC), 2015-2016; IEEE International Conference on Networking and Services (ICNS) 2012, 2014-2016; Embedded Operating Systems Workshop (EWiLi), 2015-2016; Design Automation Conference (DAC), 2013-2015; IEEE/ACM Design, Automation and Test in Europe (DATE), 2015; IEEE/IFIP International Conference on Embedded and Ubiquitous Computing (EUC), 2012-2014; IEEE International Conference on Parallel Processing (ICPP), 2013; IEEE International Symposium on Circuits and Systems (ISCAS), 2013; ACM Conference on Languages, Compilers, and Tools for Embedded Systems (LCTES) 2011; IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS) 2011; IEEE International Symposium on High Performance Computer Architecture (HPCA) 2010; IEEE Conference on Local Computer Networks (LCN) 2008-2009.

- **Reviewer** - Transactions on Reconfigurable Technology and Systems (TRETTS) 2010-2013, 2015, 2017; Journal of Women and Minorities in Science and Engineering (JWMSE) 2013-2014, 2016-2017; Journal of Supercomputing, 2010, 2017; IEEE Internet of Things Journal (IoT-J), 2017; IEEE Transactions on Multi-Scale Computing Systems (TMSCS), 2016; MDPI Remote Sensing Journal, 2011, 2013, 2016; Elsevier Journal of Computational Science (JOCS) 2016; IEEE International Conference on Networking and Services (ICNS) 2009, 2011, 2016; ACM Transactions on Architecture and Code Optimization (TACO), 2015; IEEE Sensors Journal, 2015; IEEE Transactions on VLSI Systems (TVLSI) 2007-2015; ACM Transactions on Design Automation of Electronic Systems (TODAES) 2012, 2014-2015; IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD) 2011-2015; Elsevier Journal of Systems Architecture (JSA), 2013, 2015; IEEE Transactions on Computers 2007-2009, 2011-2012, 2014-2015; IEEE Frontiers in Education (FIE), 2012-2015; IEEE Transactions on Embedded Computing Systems (ESL) 2009-2010, 2013, 2015; Elsevier Image Communications, 2015; IEEE Transactions on Parallel and Distributed Systems (TPDS), 2015; Springer Journal of Signal Processing (JSPS) 2013-2014; IEEE MICRO 2014; Design Automation for Embedded Systems (DAEM), 2013-2014; ACM Computing Surveys 2014; IEEE Transactions on Embedded Computing (TECS) 2007, 2009-2011, 2013; IEEE/ACM International Symposium on Microarchitecture (MICRO), 2011, 2013; Elsevier Computer Communications (COMCOM), 2013; IEEE/ACM Design, Automation and Test in Europe (DATE), 2013; European Association for Signal Processing (EURASIP), 2012-2013; IEEE Transactions on Vehicular Technology (TVT), 2012; Springer Link Design Automation for Embedded Systems (DAES) 2009, 2012; IEEE International Conference on Field-Programmable Technology (FPT), 2011; IARIA International Conference on Mobile Ubiquitous Computing, Systems, Services and Technologies (UBICOMM), 2011; IEEE Transactions on Parallel and Distributed Systems, 2010; Design Automation Conference (DAC) 2010-2012; Elsevier ComNet 2010; IEEE Transactions on Circuits and Systems - Part II (TCAS-II) 2007-2008; IEEE/ACM International Symposium on Computer Architecture (ISCA) 2009; IET Computers and Digital Techniques 2008, 2010; Elsevier Microelectronics Journal 2008, 2010; IEEE International Symposium on High-Performance Computer Architecture (HPCA) 2007; IEEE/ACM International Conference on Computer Aided Design (ICCAD) 2006; IEEE Computer Architecture letters (CAL) 2006; Embedded Computer Systems: Architecture, Modeling, and Simulation (SAMOS) 2006, IEEE/ACM International Conference on Compilers, Architecture, and Synthesis for Embedded Systems (CASES) 2003, 2005; ACM International Conference on Computing Frontiers 2005; ACM Conference on Languages, Compilers, and Tools for Embedded Systems (LCTES) 2003.
- **Editorial Boards** - United Scholars Publications Journal of Informatics and Computing Technology, 2015 to present; IEEE Transactions on Computers, 2015 to present; IEEE Transactions on Parallel and Distributed Systems (TPDS), 2014 to present; IEEE Embedded Systems Letters (ESL), 2013 to present; Elsevier Journal of Systems Architecture (SYSARC) - Special Issue on Software for Embedded and Ubiquitous Computing, 2013 to 2015;
- **Guest Editorials** - Multi-Core Systems-On-Chips Design and Optimization, Special Issue MDPI Computers, 2018.

- **Advisory/Technical Committees** - IEEE Women in Engineering Workshop, IEEE International Conference on Computer Design (ICCD), October 2015; IEEE Outreach Workshop on Multicore/Many-core SoC Design & Development. IEEE International System-on-Chip Conference (SOCC), Sept 2015; IARIA International Conference on Mobile Ubiquitous Computing, Systems, Services and Technologies (UBICOMM), 2014 to present; Women in Engineering ProActive Network (WEPAN) 2011 – 2014; IEEE International Conference on Embedded and Ubiquitous Computing (EUC), August 2014;
- **Session Chair** – IEEE/ACM International Conference on Hardware/Software Codesign and System Synthesis (CODES+ISSS), 2017; IEEE International System-on-Chip Conference (SOCC), Sept 2015; IEEE International Conference on Embedded and Ubiquitous Computing (EUC), 2014; ACM Great Lakes Symposium on VLSI (GLSVLSI) 2008, 2014; IEEE International Conference on Computer Design (ICCD), 2011; National Association for Multicultural Engineering Program Advocates (NAMEPA) and the Women in Engineering ProActive Network (WEPAN) Conference 2010; IEEE Design Automation Conference (DAC), 2010; IEEE/ACM International Conference on Compilers, Architecture, and Synthesis for Embedded Systems (CASES), 2008; IEEE/ACM International Conference on Hardware/Software Codesign and System Synthesis (CODES+ISSS), 2008 – 2009; IEEE Computer Society Annual Symposium on VLSI (ISVLSI), 2008.
- **Memberships** - Women in Engineering ProActive Network (WEPAN) Since 2009, ACM Since 2007, IEEE Since 2001
- **Invited Panelist**
 - *Women Breaking the STEM Ceiling: Removing Barriers for Current Students.* GlobalMindED Conference, June 2015.
 - *10 Years of Ubiquity: Remaining Challenges.* IARIA International Conference on Mobile Ubiquitous Computing, Systems, Services and Technologies (UBICOMM), October 2013
 - *Breakout Session: Enhancing Student and Faculty Diversity.* Electrical and Computer Engineering Department Heads (ECEDHA), 2013.
 - *Ubiquitous Systems - Ubiquity for Everyone: What is Missing?* IARIA International Conference on Mobile Ubiquitous Computing, Systems, Services and Technologies (UBICOMM), October 2010
 - *Image Processing and Dynamic Partial Reconfiguration.* The International Conference on Engineering of Reconfigurable Systems and Architectures (ERSA), July 2010
- **Invited Talks**
 - Exascale May Not Be Possible Without FPGAs. A. Gordon-Ross and G. Stitt. *International Green and Sustainable Computing Conference*, October 2017.
 - *Design Space Exploration for Hardware/Software-based Embedded Systems.* A. Gordon-Ross. Emerging Technologies: Communications, Microsystems, Optoelectronics, Sensors (ETCMOS), May 2017.
 - *Deep Learning with Intel DAAL on Knights Landing Processor.* D. Ojika and A. Gordon-Ross. *IML Machine Learning Workshop*, March 2017.
 - *IEEE Global Virtual Workshop on Early Career Faculty Development: Student Assessment, Grading, and Cheating.* IEEE 2015 Early Career Faculty Development (ECFD) Virtual Workshop, October 2015.
 - *Creating a Research Program.* Global Virtual Mini-Conference Series on Early Career Faculty Development (ECFD), December 2014.
 - *Proactively Enhancing STEM Diversity.* Women in Engineering Workshop (WIE) Co-located with the IEEE International Conference on Computer Design (ICCD), October 2014.
 - *Pursuing an Academic Position in ECE.* Women in Electrical and Computer Engineering (WECE) Female Faculty Seminar, Department of Electrical and Computer Engineering, University of Florida, February 2014.
 - *Self-Adapting Optimization Techniques for Design-Constrained Embedded Systems.* Department of Electrical and Computer Engineering, NC State University, January 2012

- *Self-Adapting Optimization Techniques for Design-Constrained Embedded Systems.* Department of Electrical and Computer Engineering, University of Florida, September 2011.
- *Profiling and Optimization Methodologies for Wireless Sensor Networks.* CMOS Emerging Technologies (CMOSET), June 2011.
- *VAPRES: A Customizable and Flexible Base Architecture for Partially Reconfigurable Systems.* The International Conference on Engineering of Reconfigurable Systems and Architectures (ERSA), July 2010

Funding

Total Funding - \$5,122,864 (as PI - \$1,698,864; as Co-PI - \$3,424,000)

- **CSR: EAGER: Quality-of-Experience-Aware Runtime Optimizations for Heterogeneous Multi-Core Systems** – PI – National Science Foundation, \$278,382. July 2017 to June 2019.
- **NSF Center for High-Performance Reconfigurable Computing (CHREC)** – Co-PI (PI - Dr. Alan George) - NSF Center for High-Performance Reconfigurable Computing (CHREC) at the University of Florida, \$325,000. January 2012 to March 2018.
- **CAREER: A Self-Tuning Cache Architecture for Multi-Core Systems (Supplement)** – PI – National Science Foundation, \$107,923. April 2016 – April 2018.
- **F2-15: VAPoR: Virtualization for Adaptivity, Productivity, Portability, and Redundancy.** Co-PI (PI - Dr. Gregory Stitt) – NSF Center for High-Performance Reconfigurable Computing (CHREC) at the University of Florida, \$120,000. January 2015 to December 2015.
- **F4-15: Hybrid Space Computing.** Co-PI (PI - Dr. Alan George) – NSF Center for High-Performance Reconfigurable Computing (CHREC) at the University of Florida, \$232,000. January 2015 to December 2015.
- **F5-15: Processor Metrics, Benchmarks, and Optimizations.** Co-PI (PI - Dr. Alan George) – NSF Center for High-Performance Reconfigurable Computing (CHREC) at the University of Florida, \$216,000. January 2015 to December 2015.
- **F6-15: Space Processors, Applications, and Networks.** Co-PI (PI - Dr. Alan George) – NSF Center for High-Performance Reconfigurable Computing (CHREC) at the University of Florida, \$332,000. January 2015 to December 2015.
- **New 2014 CHREC membership – Draper Laboratory.** PI – NSF Center for High-Performance Reconfigurable Computing (CHREC) at the University of Florida, \$40,000. January 2014 to December 2014.
- **F4-14: Hybrid Space Computing.** Co-PI (PI - Dr. Alan George) – NSF Center for High-Performance Reconfigurable Computing (CHREC) at the University of Florida, \$220,000. January 2014 to December 2014.
- **F5-14: Processor Metrics, Benchmarks, and Optimizations.** Co-PI (PI - Dr. Alan George) – NSF Center for High-Performance Reconfigurable Computing (CHREC) at the University of Florida, \$148,000. January 2014 to December 2014.
- **F6-14: Space Processors, Systems, and Applications.** Co-PI (PI - Dr. Alan George) – NSF Center for High-Performance Reconfigurable Computing (CHREC) at the University of Florida, \$276,000. January 2014 to December 2014.
- **F4-13: Partially Reconfigurable System Development and Management** - PI – NSF Center for High-Performance Reconfigurable Computing (CHREC) at the University of Florida, \$60,000. January 2013 to December 2013.
- **F5-13: Processor Metrics, Benchmarks, & Characterizations** – Co-PI (PI - Dr. Alan George) – NSF Center for High-Performance Reconfigurable Computing (CHREC) at the University of Florida, \$296,000. January 2013 to December 2013.
- **F6-13: Space-based Systems & Networks** – Co-PI (PI - Dr. Alan George) – NSF Center for High-Performance Reconfigurable Computing (CHREC) at the University of Florida, \$196,000. January 2013 to December 2013.
- **Bitstream Compression for Field-Programmable Gate Arrays** – PI – University of Florida’s University Scholar’s Program, \$2,250. August 2012 to May 2013.
- **F4-12: High-Level Frameworks for Partially Reconfigurable Systems** – PI – NSF Center for High-Performance Reconfigurable Computing (CHREC) at the University of Florida, \$80,500. January 2012 to December 2012.

- **F5-12: Device Analysis and Comparison – Metrics, Reliability, and Dependability** – Co-PI (PI - Dr. Alan George) – NSF Center for High-Performance Reconfigurable Computing (CHREC) at the University of Florida, \$91,000. January 2012 to December 2012.
- **F6-12: Advanced Space Computing** – Co-PI (PI - Dr. Alan George) – NSF Center for High-Performance Reconfigurable Computing (CHREC) at the University of Florida, \$112,000. January 2012 to December 2012.
- **F4-11: High-Level Frameworks for Partially Reconfigurable Applications** - PI (with Co-Pi Dr. Alan George) – NSF Center for High-Performance Reconfigurable Computing (CHREC) at the University of Florida, \$95,000. January 2011 to December 2011.
- **F5-11: Device Performance Metrics and Mission-Critical Processing Tolerance** – Co-PI (PI - Dr. Alan George) – NSF Center for High-Performance Reconfigurable Computing (CHREC) at the University of Florida, \$139,000. January 2011 to December 2011.
- **F6-11: Adaptive Space Computing Architectures** – Co-PI (PI - Dr. Alan George) – NSF Center for High-Performance Reconfigurable Computing (CHREC) at the University of Florida, \$111,000. January 2011 to December 2011.
- **NSERT Postgraduate Scholarship (PGS D)** – PI – Natural Sciences and Engineering Research Council of Canada, \$42,000. September 2010 – September 2012.
- **CAREER: A Self-Tuning Cache Architecture for Multi-Core Systems** – PI – National Science Foundation, \$539,623. May 2010 – April 2017.
- **F6-10: Adaptively Fault-Tolerant Reconfigurable Architectures** – Co-PI (PI - Dr. Alan George) – NSF Center for High-Performance Reconfigurable Computing (CHREC) at the University of Florida, \$126,000. January 2010 to December 2010.
- **F4-10: PR Architecture and Design Toolset for Embedded and Aerospace Systems Reconfiguration** - PI (with Co-Pi Dr. Alan George) – NSF Center for High-Performance Reconfigurable Computing (CHREC) at the University of Florida, \$98,000. January 2010 to December 2010.
- **Small Satellite Communications and Sensor Network** – Co-PI (PI - Dr. Janice McNair) – National Science Foundation, \$450,000. August 2009 to July 2012.
- **F4-09: Virtual Architecture and Design Automation for Partial Reconfiguration** - PI (with Co-Pi Dr. Alan George) – NSF Center for High-Performance Reconfigurable Computing (CHREC) at the University of Florida, \$95,000. January 2009 to December 2009
- **F6-09: Reconfigurable and Hybrid Fault Tolerance** – Co-PI (PI - Dr. Alan George) – NSF Center for High-Performance Reconfigurable Computing (CHREC) at the University of Florida, \$147,000. January 2009 to December 2009.
- **A Dynamic Profiling and Optimization Platform for Sensor-Based Networks** - PI (Collaborative Research with Dr. Susan Lysecky and Dr. Roman Lysecky at the University of Arizona) – National Science Foundation, \$208,100. August 2008 to July 2010

Donations

- **Nuvoton Technology Corporation** – Donation of NuMicro™ Nu-LB NUC140 ARM Cortex™-M0 Learning Board.
- **Xilinx, Inc** – Donation of Xilinx Vivado™ Design Suite, 2013. *Commercial value* - \$2,395.
- **OpenSparc University Program, Sun Microsystems** – Donation of Xilinx Vertex-5 OpenSPARC Evaluation Platform, 2009. *Commercial value* - \$1,999
- **Xilinx, Inc** – Donation of Xilinx® Tri-Mode Ethernet MAC core and Xilinx ISE Foundation Site License, 2008. *Commercial value* - \$21,490.00

Synergistic Activities and Outreach

- **Presidents' Day Visit** – Introducing high school students and parents about majors in engineering. *University of Florida - 2017*
- **Girls Build** – Hands-on activities to explore how engineering ties in with future careers of women. *University of Florida, Cade Museum - 2017.*
- **Makey Makey (WECE)** - Utilized Makey Makey, littleBits, and paper circuits to create interactive projects to teach K-12 students and inspire STEM education. *University of Florida, Cade Museum - 2017.*

- **STEMazing Race (WECE)** - High school students complete challenges that connect all fields of STEM throughout campus and race to the finish line with quality solution to each challenge. *University of Florida - since 2016.*
- **Judge at State Science and Engineering Fair (SSEF) of Florida** – State science and engineering fair for high - *since 2014.*
- **Comprehensive Support for STEM Students with Learning Disability (CS3LD)** - *Faculty Mentor 2013-2014.*
- **Women's Student Association (WSA)** – *Women's Mentoring Program Volunteer Mentor, since 2012.*
- **Lab Tour Host** – Lab tour and information session for high school students – *In conjunction with Junior Science, Engineering, and Humanities Symposium (JSEHS), since 2011.*
- **University Minority Mentoring Program (UMMP)** – *Volunteer Mentor, University of Florida, since 2008.*
- **Phi Sigma Rho National Society for Women in Engineering and Engineering Technology** – *Faculty Advisor, University of Florida, since 2008.*
- **Women in Electrical and Computer Engineering (WECE)** – *Faculty Advisor, University of Florida, since 2007.*

Awards, Fellowships, and Honors

- **College of Engineering Doctoral Dissertation Advisor/Mentoring Awardee** – *Academic Year 2015-2016*
- **Best Paper Award** – “Dynamic Phase-based Optimization of Embedded Systems,” T. Adegbija and A. Gordon-Ross. *IEEE Computer Society Annual Symposium on VLSI (ISLVS1), July 2014 - PhD Forum*
- **CAREER: A Self-Tuning Cache Architecture for Multi-Core Systems** – PI – National Science Foundation, \$539,623. May 2010 – April 2015.
- **Best Paper Award** – “A One-Shot Dynamic Optimization Methodology for Wireless Sensor Networks,” A. Munir, A. Gordon-Ross, S. Lysecky, and R. Lysecky. *IARIA International Conference on Mobile Ubiquitous Computing, Systems, Services and Technologies (UBICOMM'10), Florence, Italy, October 2010.*
- **Best Paper Award** – “Lightweight Runtime Control Flow Analysis for Adaptive Loop Caching,” M. Rawlins and A. Gordon-Ross. *ACM Great Lakes Symposium on VLSI (GLSVLSI), May 2010.*
- **2008 IT Florida Award Recipient** – 2008 Excellence in Sustainability Through Information Technology – Presented to The Energy Efficient Ethernet Project, October 2008.
- **Graduated Magna Cum Laude** – June 2000.
- **Outstanding Student Commencement Award**, Marlan and Rosemary Bourns College of Engineering – June 2000. Selected as the outstanding female student in engineering in the graduating class of 2000.

Advised Students

Graduated Ph.D. Students

- **David Ojika** – “Flexible Architecture for Programmable Accelerators at Datacenter-Scale” – *May 2017.*
- **Nicholas Wulf** – “Framework for Optimizing FPGA-Based Space Systems” – *May 2016.*
- **Hamam Alsafrjalani** – “Dynamic Scheduling for Configurable Heterogeneous Embedded Systems” – *Dec 2015.* Currently an Assistant Professor in Practice, University of Miami, College of Engineering Electrical and Computer Engineering Department.
- **Shaon Yousuf** – “Design Automation For Partially Reconfigurable FPGAs: Design Flows, Tools And Architectures” – *Dec 2015.* Currently at Intel Corporation.
- **Aurelio Morales-Villanueva** – “On-Chip Software Tools for Hardware Multitasking on Partially Reconfigurable FPGAs” – *May 2015.* Currently a Professor at the Universidad Nacional de Ingenieria in Lima, Peru.
- **Rohit Kumar** – “Rapid Partial Reconfiguration Application Development” – *May 2015.* Currently at Schweitzer Engineering Labs.
- **Tosiron Adegbija** – “Dynamic Phase-based Optimization of Embedded Systems” – *May 2015.* Currently an Assistant Professor at the University of Arizona.
- **Wei Zang** – “Analytical Modeling And Analysis Of Memory Access For Cache Tuning” – *May 2013.* Currently a Staff Research Engineer at SK Hynix Memory Solutions Inc.
- **Marisha Rawlins** – “Dynamic Low Energy Cache Optimizations for Embedded Systems” – *May 2012.* Currently an Assistant Professor at the University of Trinidad and Tobago.

- **Arslan Munir** – “Modeling and Optimization of Single-core and Multi-core Embedded Systems” – May 2012. Co-Advised by Dr. Sanjay Ranka, Professor in the Department of Computer Information Science and Engineering at the University of Florida. Currently an Assistant Professor at Kansas State University.

Graduated Masters Thesis Students

- **Karthikeyan Sabhanatarajan** – “Smart-Nics: Power Proxying For Reduced Power Consumption in Network Edge Devices” – December 2008. *Current employed as an Engineer in Software Engineering at Cisco Systems, Inc.*