

Daniel C. Wilson

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EDUCATION

- Boston University, Boston, MA: Ph.D. in Computer Engineering* 08/2023
Thesis: *Performance-Aware Site-Wide Data Center Power Management*
Advised by Prof. Ayse K. Coskun
- NCSU, Raleigh, NC: Dual B.S. in Computer Science & Computer Engineering* 05/2013

WORK EXPERIENCE

- Intel, Software Engineering and Research Intern (C++, Python)* 06/2019 – 08/2023
- Developed software to manage cluster power while reacting to application performance
 - Published a method for performance-guided CPU frequency boosting [1]
 - Published an opportunity analysis in performance-aware cluster power management [4]
 - Extended and maintained the open-source GEOPM project (geopm.github.io)
- Boston University, Ph.D. Student, advised by Ayse K. Coskun* 09/2018 – 08/2023
- Investigated opportunities for energy cost savings with QoS-constrained demand response policies in data centers [2, 3, 5]
 - TA for an operating systems course, delivering some lectures and developing new assignments.
- Itron, Software Engineer, Embedded Linux (C++)* 07/2017 – 07/2018
- Automated management of application containers on an edge computing platform
 - Investigated how to increase CPU utilization without negatively impacting core features
 - Identified security impact of defects and risk level of potential fixes
- NetApp, Software Engineer & Intern, Data ONTAP (C, C++, Python, Perl)* 05/2011 – 07/2017
- Developed user software to simplify deployment and management of storage resources
 - Developed kernel software to manage connected storage for use by the file system
 - Analyzed customer dialogue, log dumps, and core files to explain cluster behavior
 - Developed a tool to generate dynamic test doubles for C modules in unit tests
 - Designed a training module about unit testing kernel modules in user-space

HONORS, AWARDS, & ACHIEVEMENTS

- DAC Young Fellows Research Video Award, Design Automation Conference 2020
- Boston University ECE Graduate Teaching Assistant of the Year Award 2021-2022

PUBLICATIONS

1. D. C. Wilson, A. H. Al-rawi, L. H. Lawson, S. Jana, F. Ardanaz, J. M. Eastep, and A. K. Coskun. **Guiding Hardware-Driven Turbo with Application Performance Awareness**. In Proc. 13th Int. Green Sust. Comp. Conf. (IGSC) Energy Eff. HPC State of Pract. Workshop, Oct. 2022.
2. D. C. Wilson, I. Paschalidis, and A. K. Coskun. **Site-Wide HPC Data Center Demand Response**. In High Perf. Extreme Comp. Conf. (HPEC), Sept. 2022.
3. Y. Zhang, D. C. Wilson, I. Ch. Paschalidis, and A. K. Coskun. **HPC Data Center Participation in Demand Response: an Adaptive Policy with QoS Assurance**. In IEEE Trans. on Sus. Comp., vol. 7, no. 1, pp. 157-171, Jan.-March 2022.
4. D. C. Wilson, S. Jana, A. Marathe, S. Brink, C. M. Cantalupo, D. R. Guttman, B. Geltz, L. H. Lawson, A. H. Al-rawi, A. Mohammad, F. Keceli, F. Ardanaz, J. M. Eastep, A. K. Coskun. **Introducing Application Awareness Into a Unified Power Management Stack**. In Proc. IEEE Int. Parallel and Distrib. Proc. Symp. (IPDPS), pp. 320-329, May 2021.
5. Y. Zhang, D. C. Wilson, I. Ch. Paschalidis, and A. K. Coskun. **A Data Center Demand Response Policy for Real-World Workload Scenarios in HPC**. In Design, Automation and Test in Europe Conf. (DATE), 2021.
6. Co-inventor: US patent 9348715 B2, **Storage Health Status Synchronization**. 05/2016