

2. My collaborative work with IBM ([DSN'18]) was nominated for the *2019 Pat Goldberg Memorial Best Paper Award*; this award recognizes best CS papers from IBM Research.
3. One of 7 participants selected for the *Rising Stars in Computer Architecture 2019* workshop.
4. Selected to participate in the *Rising Stars in EECS 2019* workshop.
5. Selected to participate in the *Heidelberg Laureate Forum (HLF), 2018*. Only 200 young researchers in Math and Computer Science worldwide are invited.
6. One of 5 researchers from the Heidelberg Laureate Forum to receive the *Heinz Trox Grant*.
7. *Divisional award (Intel)* – For key contribution in validation of new industry standard CPU features. This award includes recognition from senior designers and architects across Intel.
8. *Intel Employee Recognition Award* - For designing and conducting a six-month training course in CPU micro-architecture for Intel chipset validation engineers.

Invitation-only Workshop/Panel:

1. Invited to attend the *Dagstuhl Seminar on “Approximate Systems”* in May 2020.
2. One of 8 participants selected to speak at the invitation-only *Workshop on the Future of Computing Architectures (FOCA 2019)* organized by IBM Research, T. J. Watson Research Center, Yorktown Heights (NY).
3. One of 20 participants invited to attend the *Workshop on Theory and Practice of Error Efficient Computing Systems (TPEECS)*, sponsored by the *Swiss National Science Foundation (SNF)*, Chexbres, Switzerland, 2017.
4. Invited to attend the *Approximate Computing for Affordable and Interactive Analysis* workshop in San Jose, CA, as a representative of the computer architecture community.

Research Publications

Refereed Conferences

1. [DSN '19] “*gem5-Approxilyzer: An Open Source Tool for Application-level Soft Error Analysis*” **R. Venkatagiri**, K. Ahmed, A. Mahmoud, S. Misailovic, D. Marinov, C. W. Fletcher, S. V. Adve, in *Dependable Systems and Networks (DSN)*, 2019.
2. [ASPLOS '19] “*Minotaur: Adapting Software Testing Techniques for Hardware Errors*,” A. Mahmoud, **R. Venkatagiri**, K. Ahmed, S. Misailovic, D. Marinov, C. W. Fletcher, S. V. Adve, in *Architectural Support for Programming Languages and Operating Systems (ASPLOS)*, 2019. **I am a joint first author on this work**; the two first authors are listed alphabetically.
3. [DSN '18] “*Impact of Software Approximations on the Resiliency of a Video Summarization System*,” **R. Venkatagiri**, K. Swaminathan, C. C. Lin, L. Wang, A. Buyuktosunoglu, P. Bose and S. V. Adve, in *Dependable Systems and Networks (DSN)*, 2018.
4. [MICRO '16] “*Approxilyzer: Towards A Systematic Framework for Instruction-Level Approximate Computing and its Application to Hardware Resiliency*,” **R. Venkatagiri**, A. Mahmoud, S. K. S. Hari and S. V. Adve, in the *International Symposium on Microarchitecture (MICRO)*, 2016.
5. [IISWC '16] “*Resilience Characterization of a Vision Analytics Application Under Varying Degrees of Approximation*”, **R. Venkatagiri**, K. Swaminathan, C. C. Lin, L. Wang, A. Buyuktosunoglu, P. Bose and S. V. Adve, in the *International Symposium on Workload Characterization (IISWC)* 2016. Short Paper.

- [ISCA '14] “GangES: A Hybrid Injection + Program Analysis Technique for Hardware Resiliency Evaluation,” S. K. S. Hari, **R. Venkatagiri**, S. V. Adve, and H. Naeimi, in the International Symposium on Computer Architecture (ISCA), 2014.

In Submission

- [Under submission] “Winnow: Automated Application-Level Error Analysis of Program Data”, **R. Venkatagiri**, S. Misailovic, D. Marinov, C. W. Fletcher, S. V. Adve, (Under Review).

Refereed Workshops

- [TECHCON '19] “An Open-Source Toolset for Analyzing Soft Errors at the Application Level”, **R. Venkatagiri**, K. Ahmed, A. Mahmoud, S. V. Adve, D. Marinov, S. Misailovic, Semiconductor Research Corporation workshop TECHCON, 2019.
- [TECHCON '18] “Harnessing Software Testing Techniques for Hardware Resiliency Analysis” A. Mahmoud, **R. Venkatagiri**, K. Ahmed, S. V. Adve, D. Marinov, S. Misailovic, Semiconductor Research Corporation workshop TECHCON, 2018. **I am a joint first author on this work**; the two first authors are listed alphabetically.
- [WAX '17] “Leveraging Software Testing to Explore Input Dependence for Approximate Computing,” A. Mahmoud, **R. Venkatagiri**, K. Ahmed, S. V. Adve, D. Marinov and S. Misailovic, in the Workshop on Approximate Computing Across the Stack (WAX), 2017. **I am a joint first author on this work**; the two first authors are listed alphabetically.
- [WAX '16] “Towards More Precision in Approximate Computing,” **R. Venkatagiri**, A. Mahmoud and S. V. Adve, in the Workshop on Approximate Computing Across the Stack (WAX), 2016.

Thesis

- [MS-Thesis] “Predicting Compiler Optimization Performance for High-Performance Computing applications using Machine Learning algorithms,” **R. Venkatagiri** and Y. Solihin, Master’s thesis, North Carolina State University, 2005.

Released Tools

- Approxilyzer: <https://github.com/ma3mool/Approxilyzer>
- gem5-Approxilyzer: <https://github.com/rsimgroup/gem5-approxilyzer>

Teaching Experience

- [Fall 2018] Teaching Assistant, CS433: Computer System Organization, University of Illinois at Urbana Champaign.
This course taught advanced computer architecture and systems design for undergraduate and graduate students. I was responsible for designing home-works and exams, conducting office hours, revision lectures and moderating online student forums and participation.
- [Fall 2017]. Guest Lecturer, CS598: Approximate and probabilistic computing across the system stack, University of Illinois at Urbana Champaign.
This was a graduate course and my lecture was on state-of-the-art automated error analysis tools.
- [2010] Designed and taught a six-month training course in CPU micro-architecture, Intel.

This course was designed for Intel chipset validation engineers at Intel who were transitioning to validating CPU features; I won an Intel Employee Recognition Award for this.

4. [Non-Technical - 2014] Conducted introduction to Theatre Workshops, Urbana IL. This workshop was for students and community members at UIUC. The goal was to use basic theatre techniques and encourage voice projection, team building and public speaking.

Invited Talks (Selected)

1. [Oct 2019] Rising Stars in Computer Architecture (RISC-A), GeorgiaTech, Atlanta, “*Democratizing Error-Efficient Computing via Principle Application-Level Error Analysis.*”
2. [Oct 2019] Workshop on the Future of Computing Architectures (FOCA 2019), IBM Research, Yorktown, NY, “*Democratizing Error-Efficient Computing via Principle Application-Level Error Analysis.*”
3. [Sept 2019] Applications Driving Architecture (ADA, SRC JUMP Center) Liaison Talk, “*Winnow: Towards Accurate and Fast Application-level Data Error Analysis.*”
4. [Sep 2019] Semiconductor Research Corporation workshop (TECHCON), Austin, “*An Open-Source Toolset for Analyzing Soft Errors at the Application Level.*”
5. [June 2019] Dependable Systems and Networks (DSN), Portland, “*gem5-Approxilyzer: An Open Source Tool for Application-level Soft Error Analysis.*”
6. [June 2018] Dependable Systems and Networks (DSN), Luxembourg, “*Impact of Software Approximations on the Resiliency of a Video Summarization System.*”
7. [Oct 2016] International Symposium on Microarchitecture (MICRO), Taipei, Taiwan, “*Approxilyzer: Towards a Framework for Instruction-Level Approximate Computing and its Application to Hardware Resiliency.*”
8. [Apr 2016] Workshop on Approximate Computing Across the Stack, Atlanta, GA, “*Towards More Precision in Approximate Computing.*”
9. [Aug 2015] IBM TJ Watson Research Center, Yorktown NY, “*Resilience Characterization of a Video Image Analytics Application Under Varying Degrees of Algorithmic Approximation.*”

References

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