Adwait Jog

APPOINTMENTS

University of Virginia, Associate Professor and Anita Jones Faculty Fellow, Computer Science, Jan 2023-Present
William & Mary, Adina Allen Associate Professor, Department of Computer Science, Aug 2021-Dec 2022
William & Mary, Assistant Professor, Department of Computer Science, Aug 2015-July 2021

EDUCATION

Ph.D. in Computer Science and Engineering, Pennsylvania State University, PA, USA, Graduated in August 2015
B.Tech. in Electronics and Instrumentation Engineering, NIT Rourkela, India Graduated in May 2009

SELECTED PUBLICATIONS

Underlined Students are my current or former advisees. Complete publication list[1] and other materials are available here: `https://adwaitjog.github.io/pubs.html`. Total citations are 3000+, h-index=23 (as per Google Scholar)

1. Jain, R., Bhasi, V. M., Jog, A., Sivasubramaniam, A., Kandemir, M. T., and Das, C. R. (2024). Pushing the Performance Envelope of DNN-based Recommendation Systems Inference on GPUs. In *the 57th IEEE/ACM International Symposium on Microarchitecture (**MICRO**), Austin, TX*

2. Ying Li, Sun, Y., and Jog, A. (2023). Path Forward Beyond Simulators: Fast and Accurate GPU Execution Time Prediction for DNN Workloads. In *the Proceedings of 56th International Symposium on Microarchitecture (**MICRO**), Toronto, Canada*, pages 380–394, *Acceptance rate: 101/424 ∼24%*

3. Jain, R., Cheng, S., Kalagi, V., Sanghavi, V., Kaul, S., Arunachalam, M., Maeng, K., Jog, A., Sivasubramaniam, A., Kandemir, M. T., and Das, C. R. (2023). Optimizing CPU Performance for Recommendation Systems At-Scale. In *the Proceedings of 50th International Symposium on Computer Architecture (**ISCA**), Orlando, Florida*, pages 77:1–77:15, *Acceptance rate: 79/372 ∼21%*

4. Hongyuan Liu, Pai, S., and Jog, A. (2023). Asynchronous Automata Processing on GPUs. In *the Proceedings of the ACM on Measurement and Analysis of Computing Systems (**SIGMETRICS**), Orlando, Florida, USA*, pages 27:1–27:27

5. Mohamed Assem Ibrahim, Kayiran, O., Eckert, Y., Loh, G. H., and Jog, A. (2021). Analyzing and Leveraging Decoupled L1 Caches in GPUs. In *the Proceedings of 27th International Symposium on High Performance Computer Architecture (**HPCA**), Virtual Event*, pages 467–478, *Acceptance rate: 63/258 ∼24%*

6. Mohamed Assem Ibrahim, Kayiran, O., Eckert, Y., Loh, G. H., and Jog, A. (2020). Analyzing and Leveraging Shared L1 Caches in GPUs. In *the Proceedings of 29th International Conference on Parallel Architectures and Compilation Techniques (**PACT**), Virtual Event*, pages 161–173, *Acceptance rate: 35/135 ∼25%*

7. Hongyuan Liu, Pai, S., and Jog, A. (2020). Why GPUs are Slow at Executing NFAs and How to Make them Faster. In *the Proceedings of 23rd International Conference on Architectural Support for Programming Languages and Operating Systems (**ASPLOS**), Virtual Event*, pages 251–265, *Acceptance rate: 86/479 ∼18%*

8. Gurunath Kadam, Zhang, D., and Jog, A. (2020). BCoal: Bucketing-based Memory Coalescing in GPUs. In *the Proceedings of 26th International Symposium on High Performance Computer Architecture (**HPCA**), San Diego, CA*, pages 570–581, *Acceptance rate: 48/248 ∼19%*

9. Mohamed Assem Ibrahim, Hongyuan Liu, Kayiran, O., and Jog, A. (2019). Enhancing Bandwidth Utilization via Efficient Inter-core Communication in GPUs. In *the Proceedings of 28th International Conference on Parallel Architectures and Compilation Techniques (**PACT**), Seattle, WA*, pages 258–271, *Acceptance rate: 26/126 ∼21%*

10. Haonan Wang and Jog, A. (2019). Exploiting Latency and Error Tolerance of GPGPU Applications for an Energy-efficient DRAM. In *the Proceedings of 49th International Conference on Dependable Systems and Networks (**DSN**), Portland, OR*, pages 362–374, *Acceptance rate: 54/252 ∼21%*

11. Haonan Wang, Mohamed Assem Ibrahim, Mittal, S., and Jog, A. (2019). Address-Stride Assisted Approximate Value Prediction in GPUs. In *the Proceedings of 33rd International Conference on Super Computing (**ICS**), Phoenix, Arizona*, pages 184–194, *Acceptance rate: 45/193 ∼23%*

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[1]In the field of CS, conference publications are preferred over journals and the top venues are highly selective with an acceptance rate of less than 20% (`https://cra.org/resources/best-practice-memos/evaluating-computer-scientists-and-engineers-for-promotion-and-tenure/`). The premier conferences in the field of architecture/systems are: ASPLOS, ISCA, MICRO, HPCA. Other highly-selective inter-disciplinary conferences are: ICS, PACT, DSN

12. Hongyuan Liu, Mohamed Assem Ibrahim, Kayiran, O., Pai, S., and Jog, A. (2018). Architectural Support for Efficient Large-Scale Automata Processing. In *the Proceedings of 51st International Conference on Micro-Architecture **(MICRO)**, Fukuoka, Japan*, pages 908–920, *Acceptance rate: 74/351 ~21%*

13. Haonan Wang, Fan Luo, Mohamed Assem Ibrahim, Kayiran, O., and Jog, A. (2018). Efficient and Fair Multi-programming in GPUs via Effective Bandwidth Management. In *the Proceedings of 24th International Symposium on High Performance Computer Architecture **(HPCA)**, Vienna, Austria*, pages 247–258, *Acceptance rate: 54/260 ~20%*

14. Gurunath Kadam, Zhang, D., and Jog, A. (2018). RCoal: Mitigating GPU Timing Attack via Subwarp-based Randomized Coalescing Techniques. In *the Proceedings of 24th International Symposium on High Performance Computer Architecture **(HPCA)**, Vienna, Austria*, pages 156–167, *Acceptance rate: 54/260 ~20%*

15. Kayıran, O., Jog, A., Kandemir, M. T., and Das, C. R. (2013). Neither More Nor Less: Optimizing Thread-level Parallelism for GPGPUs. In *the Proceedings of 22nd International Conference on Parallel Architectures and Compilation **(PACT)**, Edinburgh, Scotland*, pages 157–166, *Acceptance rate: 36/208 ~19%*

16. Jog, A., Kayiran, O., Mishra, A. K., Kandemir, M. T., Mutlu, O., Iyer, R., and Das, C. R. (2013b). Orchestrated Scheduling and Prefetching for GPGPUs. In *the Proceedings of 40th International Symposium on Computer Architecture **(ISCA)**, Tel Aviv, Israel*, pages 332–343, *Acceptance rate: 56/288 ~19%*

17. Jog, A., Kayiran, O., Chidambaram Nachiappan, N., Mishra, A. K., Kandemir, M. T., Mutlu, O., Iyer, R., and Das, C. R. (2013a). OWL: Cooperative Thread Array Aware Scheduling Techniques for Improving GPGPU Performance. In *the Proceedings of 18th International Conference on Architectural Support for Programming Languages and Operating Systems **(ASPLOS)**, Houston, TX*, pages 395–406, *Acceptance rate: 44/191 ~23%*

AWARDS

1. Senior Member of IEEE and ACM
2. Plumeri Award for Faculty Excellence, 2022
3. Google Research Scholar Award, 2021
4. NSF CAREER Award, 2018

STUDENT ADVISING

More details are available on our lab website: <https://insight-cal.github.io/>

1. **Current Ph.D. students:** 1) Amel Fatima, 2) Yang Yang, 3) Mohammad Sonji, 4) Divya Bagla (w/Sandhya Dwarkadas)
2. **Graduated Ph.D. students:** 1) Haonan Wang, graduated in Aug 2020; now tenure-track Assistant Professor at SJSU, 2) Mohamed Assem Ibrahim (graduated in May 2021; now Member of Technical Staff at AMD Research), 3) Gurunath Kadam (graduated in May 2021; now Member of Technical Staff at AMD Inc.), 4) Hongyuan Liu (graduated in Jan 2022; now Assistant Professor at Hong Kong University of Science and Technology (Guangzhou))

MAJOR OPEN SOURCE SOFTWARE

1. Automata Acceleration on GPUs: <https://github.com/bigwater/gpunfa-artifact>
2. Multiple Application Framework for GPUs: <https://github.com/adwaitjog/mafia>

SERVICE TO PROFESSION

1. **Editor/Leadership** Associate Editor, IEEE Micro; Associate Editor, IEEE Transactions on Cloud Computing (TCC), Executive Committee Member IEEE TCuARCH
2. **Major Conference Program Committee Member:** ISCA (2024, 2023, 2021); HPCA (2025, 2023, 2021, 2020, 2018), MICRO (2023, 2021, 2019), ASPLOS (2022)
3. **Organization committee member of conferences:** HPCA 2025 (Workshops/Tutorial Chair), SIGMETRICS 2023 (SRC Judge), PACT 2020 (ACM SRC chair), GPGPU 2019, 2020 (Workshop co-chair), MICRO 2019 (Publicity co-chair), CGO 2019 (Publicity chair), ASPLOS 2018 (Local arrangements co-chair), Min-Move 2017, 2018 (Founder and Workshop Co-Chair)
4. **Journal Reviewer for** IEEE Computer Architecture Letters (CAL), IEEE Transactions on Computers (TC), IEEE Transactions on Parallel and Distributed Systems (TPDS), ACM Architecture and Code Optimization (TACO), ACM Transactions on Embedded Computing (TECS), ACM Transactions on Design Automation of Electronic Systems (TODAES)
5. **Other:** Served on multiple NSF panels, departmental/university committees, and external tenure and promotion evaluator. Invited talks in academia (NCSU, GWU, Pittsburgh, VCU, Utah, Riverside, Merced IITs, IISc) and industry (AMD, Microsoft, Intel, IBM)