Muhammad A. Awad

Contact Information

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Education

University of California, Davis, Davis, CA

Ph.D. Student, Electrical and Computer Engineering Department. 2016 to present

- Advisor: Professor John D. Owens

Alexandria University, Alexandria, Egypt

B.S., Naval Architecture and Marine Engineering Department, 2009 - 2013

Research Experience

Graduate Student Researcher September 2016 to present
Electrical and Computer Engineering Department,
University of California, Davis
Supervisor: Professor John D. Owens

Teaching Experience

Part-Time Teaching Assistant July 2014 to August 2016
Arab Academy for Science, Technology and Maritime Transport,
College of Maritime Transport and Technology
Courses: Ship Design (MM543T) and Naval Architecture (MM241T).

Professional Experience

Research Intern June 2020 to September 2020
NVIDIA, Santa Clara, CA
Designing and implementing a GPU string data structure.

Programming Intern July 2017 to September 2017
Activision Publishing, Redmond, WA
Testing and implementing different shaders for foliage rendering.

Publications

1. **M. A. Awad**, S. Ashkiani, S. D. Porumbescu and J. D. Owens. "Dynamic Graphs on the GPU." *Proceedings of the 34th IEEE International Parallel and Distributed Processing Symposium, IPDPS 2020.* May 2020.
2. **M. A. Awad**, S. Ashkiani, R. Johnson, M. Farach-Colton and J. D. Owens. "Engineering a High-Performance GPU B-Tree." *Proceedings of the 24th ACM SIGPLAN Symposium on Principles and Practice of Parallel Programming (PPoPP).* February 2019.
3. S. A. Mitchell, M. S. Ebeida, **M. A. Awad**, C. Park, A. Patney, and A. Rushdi. "Spoke-Darts for High-Dimensional Blue-Noise Sampling." *ACM Transactions on Graphics (TOG).* July 2018.
4. **M. A. Awad**, A. Rushdi, M. A. Abbas, S. A. Mitchell, A. H. Mahmoud, C. L. Bajaj, M. S. Ebeida. "All-Hex Meshing of Multiple-Region Domains without Cleanup." *Proceedings 25th International Meshing Roundtable (IMR25).* September 2016.
5. M. S. Ebeida, A. Rushdi, **M. A. Awad**, A. H. Mahmoud, D.-M. Yan, S. English, J. D. Owens, C. Bajaj, and S. A. Mitchell. "Disk Density Tuning of a Maximal Random Packing." *SGP 2016.* June 2016.

6. M. S. Ebeida, S. A. Mitchell, A. Patney, A. A. Davidson, S. Tzeng, **M. A. Awad**, A. H. Mahmoud, and J. D. Owens. ""Exercises in High-Dimensional Sampling: Maximal Poisson-disk Sampling and k-d Darts." In Janine Bennett, Fabien Vivodtzev, and Valerio Pascucci, editors, *Topological and Statistical Methods for Complex Data Tackling Large-Scale, High-Dimensional, and Multivariate Data Sets, Springer.* June 2014.

7. M. S. Ebeida, **M. A. Awad**, X. Ge, A. H. Mahmoud, S. A. Mitchell, P. M. Knupp, and L.-Y. Wei. "Improving Spatial Coverage while Preserving Blue Noise of Point Sets." *Computer Aided Design (SIAM GD/SPM 2013).* November 2013.

8. M. S. Ebeida, A. H. Mahmoud, **M. A. Awad**, M. A. Mohammed, S. A. Mitchell, A. Rand, and J. D. Owens. "Sifted Disks." *"Computer Graphics Forum (Eurographics 2013), 32(2).* May 2013.

Talks

1. **M. A. Awad**. "Engineering a High-Performance GPU B-Tree." *NVIDIA*. April 2019.

Service

- Reviewer for IEEE Transactions on Parallel and Distributed Systems (TPDS), 2019

Technical Skills

- Programming: C++, CUDA C/C++, QT, OpenGL.
- Applications: AutoCAD, Paraview, LaTeX, MATLAB (linear algebra).
- Operating Systems: Microsoft Windows, and Linux.

References

Professor John D. Owens (advisor)
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Electrical and Computer Engineering Department
University of California, Davis
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