

## Muhammad A. Awad

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CONTACT INFORMATION	2250 Kemper Hall, Bainer Hall Drive Davis, CA 95616	530-574-3904 mawad@ucdavis.edu
EDUCATION	<b>University of California, Davis</b> , Davis, CA  Ph.D. Student, Electrical and Computer Engineering Department. 2016 to present <ul style="list-style-type: none"><li>• Advisor: Professor John D. Owens</li></ul> <b>Alexandria University</b> , Alexandria, Egypt  B.S., Naval Architecture and Marine Engineering Department, 2009 - 2013	
RESEARCH EXPERIENCE	<b>Graduate Student Researcher</b> Electrical and Computer Engineering Department, University of California, Davis Supervisor: Professor John D. Owens	September 2016 to present
TEACHING EXPERIENCE	<b>Part-Time Teaching Assistant</b> Arab Academy for Science, Technology and Maritime Transport, College of Maritime Transport and Technology Courses: Ship Design (MM543T) and Naval Architecture (MM241T).	July 2014 to August 2016
PROFESSIONAL EXPERIENCE	<b>Research Intern</b> NVIDIA, Santa Clara, CA Designing and implementing a GPU string data structure.	June 2020 to September 2020
	<b>Programming Intern</b> Activision Publishing, Redmond, WA Testing and implementing different shaders for foliage rendering.	July 2017 to September 2017
PUBLICATIONS	<ol style="list-style-type: none"><li>1. <b>M. A. Awad</b>, S. Ashkiani, S. D. Porumbescu and J. D. Owens. "Dynamic Graphs on the GPU." <i>Proceedings of the 34th IEEE International Parallel and Distributed Processing Symposium, IPDPS 2020</i>. May 2020.</li><li>2. <b>M. A. Awad</b>, S. Ashkiani, R. Johnson, M. Farach-Colton and J. D. Owens. "Engineering a High-Performance GPU B-Tree." <i>Proceedings of the 24th ACM SIGPLAN Symposium on Principles and Practice of Parallel Programming (PPoPP)</i>. February 2019.</li><li>3. S. A. Mitchell, M. S. Ebeida, <b>M. A. Awad</b>, C. Park, A. Patney, and A. Rushdi. "Spoke-Darts for High-Dimensional Blue-Noise Sampling." <i>ACM Transactions on Graphics (TOG)</i>. July 2018.</li><li>4. <b>M. A. Awad</b>, 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." <i>Proceedings 25th International Meshing Roundtable (IMR25)</i>. September 2016.</li><li>5. M. S. Ebeida, A. Rushdi, <b>M. A. Awad</b>, 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." <i>SGP 2016</i>. June 2016.</li></ol>	

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, L<sup>A</sup>T<sub>E</sub>X, MATLAB (linear algebra).
- Operating Systems: Microsoft Windows, and Linux.

#### REFERENCES

Professor John D. Owens (advisor)  
 Child Family Professor of Engineering and Entrepreneurship  
 Electrical and Computer Engineering Department  
 University of California, Davis E-mail: jowens@ece.ucdavis.edu

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