

# Ahmed Abdelkader Abdelrazek

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EDUCATION **Ph.D. in Computer Science**  
University of Maryland, College Park, MD (Fall 2013 – Present)

- Research interests: Computational Geometry, Approximation Algorithms.

**M.Sc. in Applied Mathematics**  
Alexandria University, Alexandria, Egypt (Spring 2010 – Spring 2013)

- Thesis: Optimization Problems in Visual Surveillance.

**B.Sc. in Computer Engineering**  
Alexandria University, Alexandria, Egypt (Fall 2004 – Spring 2009)

HONORS & AWARDS Ann G. Wylie Dissertation Fellowship, University of Maryland, College Park, 2019.  
Dean's Fellowship, University of Maryland, College Park, 2013-2014.  
Honorable Mention, The ACM International Collegiate Programming Contest - World Finals, 2011.  
Bronze medal, Egyptian Olympiad in Informatics, 2006.

PUBLICATIONS (SELECTED) **Approximate Nearest Neighbor Searching with Non-Euclidean and Weighted Distances**  
ACM-SIAM Symp. on Discrete Algorithms (SODA), 2019  
A. A., Sunil Arya, Guilherme da Fonseca, David Mount

**Economical Delone Sets for Approximating Convex Bodies**  
Scandinavian Symp. and Workshops on Algorithm Theory (SWAT), 2018  
A. A., David Mount

**Sampling Conditions for Conforming Voronoi Meshing by the VoroCrust Algorithm**  
Symp. on Computational Geometry (SoCG), 2018  
A. A., C. Bajaj, M. Ebeida, A. Mahmoud, S. Mitchell, J. Owens, A. Rushdi

**A Constrained Resampling Strategy for Mesh Improvement**  
Symp. on Geometry Processing (SGP), 2017  
A. A.\*, Ahmed Mahmoud\*, Ahmad Rushdi, Scott Mitchell, John Owens, Mohamed Ebeida (\* eq.)

**A Seed Placement Strategy for Conforming Voronoi Meshing**  
Canadian Conf. on Computational Geometry (CCCG), 2017  
A. A., Chandrajit L. Bajaj, Scott A. Mitchell, Mohamed S. Ebeida

**Argus: Realistic Target Coverage by Drones**  
ACM/IEEE Int. Conf. on Information Processing in Sensor Networks (IPSN), 2017  
Ahmed Saeed, A. A., Azin Neishaboori, Mouhyemen Khan, Khaled Harras, Amr Mohamed  
– full version to appear in the ACM Transactions on Sensor Networks (TOSN)

**2048 Without New Tiles Is Still Hard**  
Int. Conf. on Fun with Algorithms (FUN), 2016  
A. A., Aditya Acharya, Philip Dasler

**The Inapproximability of Illuminating Polygons by  $\alpha$ -Floodlights**  
Canadian Conf. on Computational Geometry (CCCG), 2015  
A. A., Ahmed Saeed, Khaled Harras, Amr Mohamed

**Visibility Induction for Discretized Pursuit-Evasion Games**  
AAAI Conf. on Artificial Intelligence (AAAI), 2012  
A. A., Hazem El-Alfy

**Analysis of a Device-free Passive Tracking System in Typical Wireless Environments**  
Int. Conf. on New Technologies, Mobility and Security (NTMS), 2009  
Ahmed Kosba, A. A., Moustafa Youssef

WORKSHOP & DEMO PAPERS (SELECTED)	<p><b>VoroCrust Illustrated: Theory and Challenges</b> International Computational Geometry Multimedia Exposition (CG:MME), 2018 A. A., C. Bajaj, M. Ebeida, A. Mahmoud, S. Mitchell, J. Owens, A. Rushdi</p> <p><b>Homology Localization by Hierarchical Blowups</b> Young Researchers Forum - Symp. on Computational Geometry (SoCG), 2016 A. A.</p> <p><b>Brands in NewsStand: Spatio-Temporal Browsing of Business News</b> ACM Int. Conf. on Advances in Geographic Information Systems (SIGSPATIAL), 2015 A. A., Emily Hand, Hanan Samet</p>
RESEARCH VISITS	<p><b>Sandia National Laboratories</b>, Albuquerque, NM <span style="float: right;"><b>2015 – 2018 (multiple)</b></span> Worked on meshing algorithms with Scott Mitchell and Mohamed Ebeida.</p> <p><b>Université libre de Bruxelles</b>, Brussels, Belgium <span style="float: right;"><b>Sep 2017</b></span> Studied tilings and <math>\exists\mathbb{R}</math>-hardness with Prof. Stefan Langerman and Prof. Jean Cardinal.</p> <p><b>University of Texas at Austin</b>, Austin, TX <span style="float: right;"><b>May 2015</b></span> Worked on surface reconstruction with Prof. Chandrajit Bajaj.</p>
TEACHING ASSISTANTSHIPS	<p><b>University of Maryland</b>, College Park, MD</p> <p>CMSC 754: Computational Geometry (Fall 2016) CMSC 351: Algorithms (Summer 2016) CMSC 425: Game Programming (Spring 2016) CMSC 451: Design and Analysis of Computer Algorithms (Fall 2015) CMSC 250: Discrete Structures (Fall 2013, Spring 2014)</p> <p><b>Alexandria University</b>, Alexandria, Egypt <span style="float: right;"><b>Fall 2009 – Spring 2013</b></span> Calculus, Differential Equations, Numerical Methods, Probability, Linear Algebra, C Programming, Object Oriented Programming, Data Structures, Algorithms, Machine Learning, Automata Theory.</p>
PROFESSIONAL EXPERIENCE (SELECTED)	<p><b>Google Inc.</b>, Mountain View, CA</p> <p>Google Research <i>Intern Software Engineer</i> <span style="float: right;"><b>Jun – Aug 2014</b></span> Scalable geometry processing.</p> <p><b>Nezal Entertainment</b>, Alexandria, Egypt <span style="float: right;"><b>Nov 2011 – Jan 2012, May – Aug 2012</b></span> <i>Game Developer</i> Worked on the game play and internationalization of Crowds. Created prototypes for new projects.</p> <p><b>Google Inc.</b>, Mountain View, CA</p> <p>GMail SRE <i>Intern Site Reliability Engineer</i> <span style="float: right;"><b>Jun – Oct 2011</b></span> Statistical monitoring of development servers, Space-time analysis for global load balancing.</p> <p><b>Google Switzerland GmbH</b>, Zürich, Switzerland</p> <p>GMail Spam, Abuse and Delivery <i>Intern Software Engineer</i> <span style="float: right;"><b>Jul – Sep 2010</b></span> Abuse detection, Other enhancements to the learning pipeline and attachment scanner.</p> <p><b>Microsoft Corporation</b>, Redmond, WA</p> <p>Core Operating System Division <i>Intern Software Design Engineer in Test</i> <span style="float: right;"><b>Jun – Sep 2008</b></span> Physical test automation, Automatic inference of fuzz test input specifications.</p>
SERVICE (SELECTED)	<p>Reviewer: 2019 (SODA, ICRA, CASE), 2018 (SoCG, CCCG, HPG, ICRA, CASE), 2017 (COCOON)</p>