

Ahmed Abdelkader Abdelrazek

CONTACT INFORMATION	201 East 24th Street, POB 2.432 Oden Institute, UT Austin Austin, TX 78712	<i>E-mail:</i> akader@utexas.edu <i>WWW:</i> https://akader.netlify.app
RESEARCH	Computational Geometry and Topology, Machine Learning, Dynamical Systems.	
CURRENT POSITION	Postdoctoral Fellow (Sep 2020 – now) The Oden Institute for Computational Engineering and Sciences University of Texas at Austin <ul style="list-style-type: none">• Host: Chandrajit L. Bajaj	
EDUCATION	Ph.D. in Computer Science University of Maryland, College Park, MD (Fall 2013 – Summer 2020) <ul style="list-style-type: none">• Thesis: Adaptive Sampling for Geometric Approximation• Advisor: David M. Mount M.Sc. in Applied Mathematics Alexandria University, Alexandria, Egypt (Spring 2010 – Spring 2013) <ul style="list-style-type: none">• Thesis: Optimization Problems in Visual Surveillance• Advisor: Hazem El-Alfy B.Sc. in Computer Engineering Alexandria University, Alexandria, Egypt (Fall 2004 – Spring 2009) <ul style="list-style-type: none">• Thesis: Device-free Passive Localization in Wi-Fi Networks• Advisor: Moustafa Youssef	
HONOURS & AWARDS	Peter O'Donnel, Jr. Postdoctoral Fellowship, University of Texas, Austin, 2020-2022. 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.	
PROFESSIONAL EXPERIENCE (SELECTED)	Sandia National Laboratories , Albuquerque, NM 2015 ~ 2019 <i>Visiting Researcher</i> – Computer Science Research Institute Google Inc. , Mountain View, CA Jun – Aug 2014 <i>Intern Software Engineer</i> – Google Research Google Inc. , Mountain View, CA Jun – Oct 2011 <i>Intern Site Reliability Engineer</i> – GMail SRE Google Switzerland GmbH , Zürich, Switzerland Jul – Sep 2010 <i>Intern Software Engineer</i> – GMail Spam, Abuse and Delivery Microsoft Corporation , Redmond, WA Jun – Sep 2008 <i>Intern Software Design Engineer in Test</i> – Core Operating System Division	

VoroCrust: Voronoi Meshing without Clipping

ACM Trans. on Graphics (ToG) & SIGGRAPH 2020

A. A., C. Bajaj, M. Ebeida, A. Mahmoud, S. Mitchell, J. Owens, A. Rushdi

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

APPROXIMATION ALGORITHMS

Approximate Nearest-Neighbor Search for Line Segments

Symp. on Computational Geometry (SoCG), 2021

A. A., David M. Mount

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 M. Mount

Economical Delone Sets for Approximating Convex Bodies

Scandinavian Symp. and Workshops on Algorithm Theory (SWAT), 2018

A. A., David M. Mount

The Inapproximability of Illuminating Polygons by α -Floodlights

Canadian Conf. on Computational Geometry (CCCG), 2015

A. A., Ahmed Saeed, Khaled Harras, Amr Mohamed

MACHINE LEARNING

The Intrinsic Dimension of Images and Its Impact on Learning

Int. Conf. on Learning Representations (ICLR), 2021

Phillip Pope, Chen Zhu, A. A., Micah Goldblum, Tom Goldstein

Detection as Regression: Certified Object Detection by Median Smoothing

Advances in Neural Inf. Proc. Sys. (NeurIPS), 2020

Ping-yeh Chiang, Michael Curry, A. A., Aounon Kumar, John Dickerson, Tom Goldstein

Certified Defenses for Adversarial Patches

Int. Conf. on Learning Representations (ICLR), 2020

Ping-yeh Chiang*, Renkun Ni*, A. A., Chen Zhu, Chris Studer, Tom Goldstein

Headless Horseman: Adversarial Attacks on Transfer Learning Models

IEEE Conf. on Acoustics, Speech, and Signal Processing (ICASSP), 2020

A. A., M. Curry, L. Fowl, T. Goldstein, A. Schwarzschild, M. Shu, C. Studer, C. Zhu

CYBER-PHYSICAL SYSTEMS

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 in the ACM Trans. on Sensor Networks (TOSN), 2019

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 &
SHORT PAPERS

VoroCrust Illustrated: Theory and Challenges

International Computational Geometry Multimedia Exposition (CG:MME), 2018

A. A., C. Bajaj, M. Ebeida, A. Mahmoud, S. Mitchell, J. Owens, A. Rushdi

Topological Distance between Nonplanar Transportation Networks

Fall Workshop on Computational Geometry (FWCG), 2018

A. A., Geoff Boeing, Brittany Terese Fasy, David Millman

2048 Without New Tiles Is Still Hard

Int. Conf. on Fun with Algorithms (FUN), 2016

A. A., Aditya Acharya, Philip Dasler

Homology Localization by Hierarchical Blowups

Young Researchers Forum - Symp. on Computational Geometry (SoCG), 2016

A. A.

Brands in NewsStand: Spatio-Temporal Browsing of Business News

ACM Int. Conf. on Advances in Geographic Information Systems (SIGSPATIAL), 2015

A. A., Emily Hand, Hanan Samet

TEACHING

University of Maryland, College Park, MD

Teaching Assistant

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)

Alexandria University, Alexandria, Egypt

Fall 2009 – Spring 2013

Teaching Assistant

Calculus, Differential Equations, Numerical Methods, Probability, Linear Algebra, C Programming, Object Oriented Programming, Data Structures, Algorithms, Machine Learning, Automata Theory.

SERVICE
(SELECTED)

Conference Reviewer/Sub-reviewer

- ACM-SIAM Symp. on Discrete Algorithms (SODA)
- Symp. on Computational Geometry (SoCG)
- Annual Conf. on Neural Info. Proc. Systems (NeurIPS)
- Int. Conf. on Learning Representations (ICLR)
- IEEE/RSJ Int. Conf. on Intelligent Robots and Systems (IROS)
- IEEE Int. Conf. on Robotics and Automation (ICRA)
- Int. Symp. on Algorithms and Computation (ISAAC)
- IEEE Int. Conf. on Advanced Robotics (ICAR)
- IEEE Int. Conf. on Automation Science and Engineering (CASE)
- High-Performance Graphics (HPG)

Journal Reviewer/Sub-reviewer

- Algorithmica (ALGO)
- Robotics and Automation Letters (RA-L)
- The Visual Computer (TVCJ)
- Computers & Graphics
- IEEE Access
- Language Resources and Evaluation (LREV)