

MOTASEM ALFARRA

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King Abdullah University of Science and Technology, Thuwal, Saudi Arabia

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EDUCATION

- PhD, King Abdullah University of Science and Technology** *May 2020 - Present*
Department of Electrical and Computer Engineering
Advisor: Bernard Ghanem
- MSc, King Abdullah University of Science and Technology** *January 2019 - May 2020*
Department of Electrical Engineering
Overall GPA: 4.0/4.0
Advisor: Bernard Ghanem
Thesis: Applications of Tropical Geometry in Deep Neural Networks
- BSc, Kuwait University** *September 2014 - May 2018*
Department of Electrical Engineering
Overall GPA: 4.0/4.0

TEACHING/RESEARCH EXPERIENCE

- **Research Internship** *October 2021 - February 2022*
University of Oxford
Oxford, United Kingdom
- **Teacher Assistance** *January 2020 - May 2020*
Introduction to Computer Vision (Ph.D. course)
KAUST, Saudi Arabia
- **Guest Lecturer** (1 Lecture) *July 2020*
Title: Adversarial Attacks and Network Robustness.
Universidad Panamericana, Mexico

SELECTED PUBLICATIONS

(* indicates equal contribution)

- [Motasem Alfarra](#), Juan C. Pérez, Anna Frühstück, Philip H. S. Torr, Peter Wonka, Bernard Ghanem. “On the Robustness of Quality Measures for GANs”, European Conference in Computer Vision [ECCV](#) 2022
- [Motasem Alfarra](#), Juan C. Pérez, Egor Shulgin, Peter Richtárik, Bernard Ghanem. “Certified Robustness in Federated Learning”. [arXiv](#) 2022
- [Motasem Alfarra*](#), Adel Bibi*, Philip H. S. Torr, Bernard Ghanem. ”Data Dependent Randomized Smoothing”. Conference on Uncertainty in Artificial Intelligence. ([UAI](#)) 2022
- [Motasem Alfarra*](#), Gabriel Pérez S.*, Juan C. Pérez*, Silvio Giancola, Bernard Ghanem. “3DeformRS: Certifying Spatial Deformations on Point Clouds”. IEEE/CVF Conference on Computer Vision and Pattern Recognition ([CVPR](#)) 2022
- Juan C. Pérez, [Motasem Alfarra](#), Ali Thabet, Pablo Arbeláez, Bernard Ghanem. “Towards Assessing and Characterizing the Semantic Robustness of Face Recognition” [arXiv](#) 2022
- [Motasem Alfarra*](#), Adel Bibi*, Naeemullah Khan, Philip H. S. Torr, Bernard Ghanem. ”DeformRS: Certifying Input Deformations with Randomized Smoothing”, [AAAI Conference on Artificial Intelligence](#) [oral]. 2022

- Motasem Alfarra, Juan C. Pérez, Ali Thabet, Adel Bibi, Philip H. S. Torr, Bernard Ghanem. "Combating Adversaries with Anti-Adversaries", [AAAI Conference on Artificial Intelligence](#). 2022
- Motasem Alfarra^{*}, Francisco Eiras^{*}, M. Pawan Kumar, Philip H. S. Torr, Puneet K. Dokania, Bernard Ghanem, Adel Bibi^{*}. "ANCER: Anisotropic Certification via Sample-wise Volume Maximization", [arXiv](#). 2021
- Juan C Pérez, Motasem Alfarra, Guillaume Jeanneret, Laura Rueda, Ali Thabet, Bernard Ghanem, Pablo Arbeláez. "Enhancing Adversarial Robustness via Test-time Transformation Ensembling", [\(AROW-ICCVW\)](#) 2021
- Motasem Alfarra^{*}, Juan C. Pérez^{*}, Adel Bibi, Ali Thabet, Pablo Arbeláez, Bernard Ghanem. "Rethinking Clustering for Robustness", British Machine Vision Conference ([BMVC](#)) 2021
- Motasem Alfarra^{*}, Juan C. Pérez^{*}, Guillaume Jeanneret^{*}, Adel Bibi, Ali Thabet, Bernard Ghanem, Pablo Arbeláez. "Gabor Layers Enhance Network Robustness", European Conference in Computer Vision ([ECCV](#)). 2020
- Motasem Alfarra, Slavomír Hanzely, Alyazeed Albasyoni, Bernard Ghanem, Peter Richtárik "Adaptive Learning of the Optimal Batch Size of SGD" ([OPT-NeurIPS](#).) 2020
- Motasem Alfarra^{*}, Adel Bibi^{*}, Hasan Hammoud, Mohamed Gaafar and Bernard Ghanem. "On the Decision Boundaries of Neural Networks: A Tropical Geometry Perspective", [arXiv](#). 2020

AWARDS AND HONORS

- **KAUST Academic Excellency Award** May 2022
Received the Academic Excellency Award of the academic year 2021/2022.
Thuwal, Saudi Arabia
- **Best Student Award** March 2019
Awarded from the emir of Kuwait H.H. Sabah Al-Ahmad Al-Jaber Al-Sabah as being the top graduate from the Electrical Engineering department.
Kuwait, Kuwait.
- **KAUST Fellowship** January 2019
A generous fellowship provided to continue my MSc/PhD studies at KAUST.
Thuwal, Saudi Arabia.
- **National Debating Competition** November 2017
Won the national debating competition and was awarded as one of the top 10 debaters.
Kuwait, Kuwait.
- **Dean's Award Honor List (6 consecutive semesters)** November, 2015 - March 2018
Awarded by the engineering dean for ranking first over 4 consecutive years.
Kuwait, Kuwait.
- **High School Examinations (6th/~23,000)** June 2014
Award for ranking among the top 50 students in high school examinations.
Kuwait, Kuwait.

SKILLS

- **Programming Skills and Software Packages**
Python, Pytorch, C++, MATLAB, Git, Anaconda, Latex, Arduino, AutoCAD.
- **Reviewer**
CVPR'22, CVPR'21, ICML'21, ICCV'21, NeurIPS'21, NeurIPS'22, ICLR'22, TPAMI.