

MOTASEM ALFARRA

Last updated: February 2022

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

Advisory Committee: Bernard Ghanem, Wolfgang Heidrich, Xiangliang Zhang (KAUST)

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*, 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
- Motasem Alfarra, Juan C. Pérez, Anna Frühstück, Philip H. S. Torr, Peter Wonka, Bernard Ghanem. "On the Robustness of Quality Measures for GANs", arXiv 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), Virtual. 2020
- Motasem Alfarra, Slavomír Hanzely, Alyazeed Albasyoni, Bernard Ghanem, Peter Richtárik "Adaptive Learning of the Optimal Batch Size of SGD" (OPT-NeurIPSW.) 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

- **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.
- **Best Student Award** 2016-2018
Awarded the best student award in the two academic years 2016-2017 and 2017-2018 from Kuwait's Minister of Education.
Kuwait, Kuwait.
- **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, ICLR'22, CVPR'22, TPAMI.