

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**

August 2022 - Present

Intel Labs

Munich, Germany

- **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*, Hasan Hammoud, Mohamed Gaafar and Bernard Ghanem. "On the Decision Boundaries of Neural Networks: A Tropical Geometry Perspective", **TPAMI** 2022
- Motasem Alfarra, Juan C. Pérez, Anna Frühstück, Philip H. S. Torr, Peter Wonka, Bernard Ghanem. "On the Robustness of Quality Measures for GANs", **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". **UAI** 2022
- Motasem Alfarra*, Gabriel Pérez S.*, Juan C. Pérez*, Silvio Giancola, Bernard Ghanem. "3DeformRS: Certifying Spatial Deformations on Point Clouds". **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 \[oral\]](#). 2022
- Motasem Alfarra, Juan C. Pérez, Ali Thabet, Adel Bibi, Philip H. S. Torr, Bernard Ghanem. "Combating Adversaries with Anti-Adversaries", [AAAI](#). 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", [BMVC](#) 2021
- Motasem Alfarra*, Juan C. Pérez*, Guillaume Jeanneret*, Adel Bibi, Ali Thabet, Bernard Ghanem, Pablo Arbeláez. "Gabor Layers Enhance Network Robustness", [ECCV](#). 2020
- Motasem Alfarra, Slavomír Hanzely, Alyazeed Albasyoni, Bernard Ghanem, Peter Richtárik "Adaptive Learning of the Optimal Batch Size of SGD" [OPT-NeurIPSW](#) 2020

AWARDS AND HONORS

- **KAUST Academic Excellency Award** July 2022
Received the Academic Excellency Award of the academic year 2021/2022.
Thuwal, Saudi Arabia
- **Best Extended Abstract Award in LatinX Workshop at CVPR'22** June 2022
"Combating Adversaries with Anti-Adversaries" won the best extended abstract award at the LatinX workshop in CVPR'22.
New Orleans, USA
- **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.