

# MOTASEM ALFARRA

Last updated: July 2022

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

(+966) 54985 8834 ◊ (+965) 9902 9031 ◊ motasem.alfarra@kaust.edu.sa

## 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, 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
- Mohammed W. Baidas, Emad Alsusa, Motasem Alfarra, Mubarak Al-Mubarak "Multi-relay selection in energy-harvesting cooperative wireless networks: game-theoretic modeling and analysis", [Telecommunication Systems](#). 2020
- Mohammed W. Baidas, Emad Alsusa, Motasem Alfarra, Mubarak Al-Mubarak "Game-Theoretic Modeling and Analysis of Multi-Relay Selection in Energy-Harvesting", [IEEE Global Communications Conference](#). 2018

## 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  
Our paper titled "Combating Adversaries with Anti-Adversaries" won the best extended abstract award at the LatinX workshop in CVPR'22.  
New Orleans, USA
- **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.
- **Scholarship by the Emir of Kuwait** September 2014  
Fully funded scholarship to join the engineering school by Kuwait's Emir.  
Kuwait, Kuwait.
- **High School Examinations (6<sup>th</sup>/~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.