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
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 - Present
  University of Oxford
  Oxford, United Kingdom

- **Teacher Assistance** January 2020 - May 2020
  Introduction to Computer Vision (PhD course)
  KAUST, Saudi Arabia

- **Guest Lecturer** (1 Lecture) July 2020
  Title: Adversarial Attacks and Network Robustness.
  Universidad Panamericana, Mexico

- **Research Assistance** September 2017 - May 2018
  Developed algorithms and implemented network simulations.
  Kuwait University, Kuwait.

SELECTED PUBLICATIONS

(* indicates equal contribution)

- <u>Motasem Alfarra</u>, 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, <u>Motasem Alfarra</u>, Ali Thabet, Pablo Arbeláez, Bernard Ghanem. "Towards Assessing and Characterizing the Semantic Robustness of Face Recognition" arXiv 2022

- <u>Motasem Alfarra</u>*, Adel Bibi*, Naeemullah Khan, Philip H. S. Torr, Bernard Ghanem. "DeformRS: Certifying Input Deformations with Randomized Smoothing", AAAI Conference on Artificial Intelligence. 2022

- <u>Motasem Alfarra</u>, Juan C. Pérez, Ali Thabet, Adel Bibi, Philip H. S. Torr, Bernard Ghanem. "Combating Adversaries with Anti-Adversaries", AAAI Conference on Artificial Intelligence. 2022

- <u>Motasem Alfarra</u>*, 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, <u>Motasem Alfarra</u>, Guillaume Jeanneret, Laura Rueda, Ali Thabet, Bernard Ghanem, Pablo Arbeláez. "Enhancing Adversarial Robustness via Test-time Transformation Ensembling", (AROW-ICCVW) 2021

- <u>Motasem Alfarra</u>*, Juan C. Pérez*, Adel Bibi, Ali Thabet, Pablo Arbeláez, Bernard Ghanem. "Rethinking Clustering for Robustness", British Machine Vision Conference (BMVC) 2021

- <u>Motasem Alfarra</u>*, Adel Bibi*, Philip H. S. Torr, Bernard Ghanem. "Data Dependent Randomized Smoothing", arXiv. 2020

- <u>Motasem Alfarra</u>*, 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

- <u>Motasem Alfarra</u>, Slavomír Hanzely, Alyazeed Albasyoni, Bernard Ghanem, Peter Richtárik "Adaptive Learning of the Optimal Batch Size of SGD" (OPT-NeurIPSW.) 2020

- <u>Motasem Alfarra</u>*, 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/$\sim$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'21, ICML'21, ICCV'21, NeurIPS'21, ICLR'22, CVPR'22, TPAMI.