Dimah Dera, Ph.D., Fred W. and Frances H. Rusteberg Endowed Fellow
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Education:
- Ph.D., Electrical and Computer Engineering, Rowan University, USA, 2020.
- M.A. Mathematics, Rowan University, USA, 2019.
- M.S., Electrical and Computer Engineering, Rowan University, USA, 2015.
- B.S., Biomedical Engineering, Damascus University, Syria, 2010.

Employment History:
- 2021-Present (1 year), Assistant Professor, Electrical and Computer Engineering Department, The University of Texas Rio Grande Valley (UTRGV), TX
- 2020-2021 (1 year), Postdoctoral Researcher, Electrical and Computer Engineering Department, Rowan Artificial Intelligence Lab (RAIL), NJ
- 2013-2020 (7 years), Graduate and Research Assistant (MS & PhD), Electrical and Computer Engineering Department, Rowan University, NJ

Relevant External Grants and Awards as Principal Investigator:
- **NSF Computer and Information Science and Engineering (CISE) Research Initiation Initiative (CRII)**, Award No. 2153413. "TRUST—TRustworthy Uncertainty Propagation for Sequential Time-Series Analysis," **$174,922**. **(May 1, 2022 – April 30, 2024)**.
- **NSF Research Experiences for Undergraduates supplemental support** for the Award No. 2153413, **$16,000**. **(May 1, 2022 – April 30, 2024)**.
- **New Jersey Health Foundation Research Grants Award**. "Towards Robust Brain Tumor Detection and Surveillance," **$35,000**. **(Feb. 14, 2021 – Feb. 14, 2023)**.
- **Fred W. and Frances H. Rusteberg Endowment Fellowship Award** "Trustworthy and Reliable Uncertainty-Aware Machine Learning," **$6,300**. **(Sep. 1, 2022 – Aug. 31, 2023)**.
- **ACM SIGHPC/Intel Computational & Data Science Fellowship Award**, **$15,000/year (Total funds $60,000)**. **(Sep. 1, 2016 – May 31, 2020)**.
- **Institute of Electrical and Electronics Engineers (IEEE) Philadelphia Benjamin Franklin Key Award**, 2021. This is the most prestigious award given by the IEEE Philadelphia section, whose citation states: "…recognize an electrical engineer for outstanding technical innovation and technological contributions that have had significant practical applications. The award emphasizes technical innovation, such as a system (design and application), a significant improvement to a system, or patents of clear practical values. Emphasis [is] on tangible technical and technological achievements that demonstrate intellectual, industrial, economical or human benefits."
- **New Jersey Tech Council STEM Innovator to Watch Award**, 2019. The Tech Council's annual STEM Watch Awards program is designed to recognize exceptional STEEM leaders across New Jersey. STEEM honorees are high achievers in the areas of Science, Technology, Engineering, Entrepreneurship and Mathematics.

- **NSF iREDEFINE Professional Development Award**, 2017. iREDEFINE ECE is a project, supported by the National Science Foundation, designed to prepare women and underrepresented minorities Ph.D. students for rewarding academic careers and provides them with a professional network of peers and mentors.
- **Rowan University Graduate Research Excellence Award**, 2017.

Relevant Publications: * Graduate Co-Authors.

- Nielsen*, I.E., **Dera, D**., Rasool, G., Ramachandran, R.P. and Bouaynaya, N.C., Robust Explainability: A tutorial on gradient-based attribution methods for deep neural networks. *IEEE Signal Processing Magazine*, 39(4), pp.73-84, 2022.
- **Dera, D.**, Bouaynaya, N.C., Rasool, G., Shterenberg, R. and Fathallah-Shaykh, H.M., PremiUm-CNN: Propagating uncertainty towards robust convolutional neural networks. *IEEE Transactions on Signal Processing*, 69, pp.4669-4684, 2021.
- Ahmed*, S., **Dera, D.**, Hassan, M. S., Bouaynaya, N. C., Rasool, G., "Failure Detection in Deep Neural Networks for Medical Imaging," in *Frontiers in Medical Technology, section Medtech Data Analytics*, 2022. https://doi.org/10.3389/fmedt.2022.919046
- Waqas*, A., **Dera, D.,** Rasool, G., Bouaynaya, N.C., Fathallah-Shaykh, H.M. Brain Tumor Segmentation and Surveillance with Deep Artificial Neural Networks. In: Elloumi, M. (eds) *Deep Learning for Biomedical Data Analysis. Springer, Cham*, 2021. https://doi.org/10.1007/978-3-030-71676-9_13.
- Carannante*, G., **Dera, D.**, Aminul, O., Bouaynaya, N. C., and Rasool, G., "Self-Assessment and Robust Anomaly Detection with Bayesian Deep Learning," *IEEE 25th International Conference on Information Fusion (FUSION)*, 2022.
- Carannante*, G., **Dera, D.,** Rasool, G., Bouaynaya, N.C. and Mihaylova, L., September. Robust learning via ensemble density propagation in deep neural networks. In *IEEE 30th International Workshop on Machine Learning for Signal Processing (MLSP)* (pp. 1-6), 2020.
- Carannante*, G., **Dera, D.,** Rasool, G. and Bouaynaya, N.C., September. Self-Compression in Bayesian Neural Networks. In *IEEE 30th International Workshop on Machine Learning for Signal Processing (MLSP)* (pp. 1-6), 2020.
- **Dera, D.,** Rasool, G., Bouaynaya, N.C., Eichen, A., Shanko, S., Cammerata, J. and Arnold, S., Bayes-SAR net: Robust SAR image classification with uncertainty estimation using Bayesian convolutional neural network. In *IEEE International Radar Conference (RADAR)* (pp. 362-367), April 2020.
- **Dera, D.,** Rasool, G. and Bouaynaya, N., Extended variational inference for propagating uncertainty in convolutional neural networks. In *IEEE 29th International Workshop on Machine Learning for Signal Processing (MLSP)* (pp. 1-6), October 2019. **Best Paper Award.**

Relevant External Service:

- (2016-Present) Member of the ACM SIGHPC: Association for Computing Machinery.
- (2018-Present) Member of the IEEE Computer Society.
- (2018-Present) Member of the IEEE Signal Processing Society.