Sadaf Gulshad

s.gulshad@uva.nl, https://sadafgulshad1.github.io/

Research Interests

• Computer vision • Machine Learning • Robust Machine Learning • Learning from Images near the boundary of class • Explainable AI

Education

PhD in Machine Learning and Computer Vision (09, 2017-present)

Supervised by Prof. Arnold Smeulders, UvA Bosch Delta Lab, https://ivi.fnwi.uva.nl/uvaboschdeltalab/, University of Amsterdam

PhD Research Project

Learning from images near the boundary of a class: learning from adversarial examples or hard positive/negative examples and making classifiers perform robustly when confronted with adversarial examples.

Publications

- Sadaf Gulshad, Arnold Smeulders, "Explaining with Counter Visual Attributes and Examples", *ICMR (Best paper session), 2020, ACM.*
- Sadaf Gulshad, Jan Hendrik Metzen, Arnold Smeulders, "Adversarial and Natural Perturbations for General Robustness", *arXiv: 2010.01401*
- Sadaf Gulshad, Jan Hendrik Metzen, Arnold Smeulders and Zeynep Akata "Interpreting Adversarial Examples using Attributes", *Women in Computer Vision Workshop with CVPR, Oral, June-2019, Long Beach, California*
- Sadaf Gulshad, Jan Hendrik Metzen, Arnold Smeulders and Zeynep Akata "Interpreting Adversarial Examples with Attributes", *arXiv:1904.08279*

Teaching and Graduate student thesis supervision

- Teaching assistant for "Applied Machine Learning" in 2017, and "Machine Learning" in 2018 and 2019.
- Supervised Arend van Dormalen on "Image-Level Supervised Semantic Segmentation with Network Attention and Saliency Priors."

- Supervised Jeroen Vranken on"Systematic Comparison of Uncertainty Estimation Methods for Diagnosing Heart Disease in Electrocardiograms using Deep Learning."
- Supervised Mehdi Güneş on "Exploring the effect of data imperfections in clinical data on model performance."
- Supervised Bella Nicholson on "Interpretable Representation Learning for Relational Data. "

Masters in Electrical Engineering (09, 2015-08, 2017)

Supervised by Prof. Jong Hwan Kim, Robotics Intelligence Technology Laboratory, http://rit.kaist.ac.kr, KAIST, South Korea • Under Korean Government Scholarship Program, NIIED.

- Course work: Neural Networks, Special Topics in Signal Processing<Neuro-Robotics>, Robot Cognition and Planning, Special Topics in Computer Engineering<Deep Learning and Dynamic Neural Network Models, Embedded Software, Intelligent Control Theory, Engineering Random Processes.
- Masters Thesis: Ladder Deep Convolutional Recurrent Writer for Generating Images.
- Masters Publications:
  - Sadaf Gulshad and Jong-Hwan Kim, "Deep Convolutional Recurrent Writer", *The International Joint Conference On Neural Networks (IJCNN). IEEE,* ***May-2017, Anchorage, Alaska***
  - Sadaf Gulshad, Dick Sigmund and Jong-Hwan Kim, "Learning to Reproduce Stochastic Time Series Using Stochastic LSTM", *The International Joint Conference On Neural Networks (IJCNN). IEEE,* ***May-2017, Anchorage, Alaska***

Korean Language 1-year Diploma (09, 2014-08, 2015)

Kangwoon National University, Chuncheon (South Korea).
Fellowship by Korean Government Scholarship Program, NIIED.

Bachelor of science in Electrical Computer Engineering (09, 2009-08, 2013)

COMSATS Institute of Information Technology, Wahcantt (Pakistan)

Appointments held

Intern (01,2014-06,2014)

Pakistan Telecommunication Company Limited (PTCL), https://www.ptcl.com.pk/

Research Assistant (09, 2015-08, 2017)

Robotics Intelligence Technology Laboratory, http://rit.kaist.ac.kr, KAIST, Republic of South Korea

Conferences and Summer schools

- P.A.I.S.S Artificial Intelligence summer school, INRIA, Grenoble, 2018
- Machine Learning summer school, London, 2019
- The Netherlands Conference on Computer Vision, 2018
- International Joint Conference On Neural Networks (IJCNN), 2017
- International Conference on Learning Representations (ICLR), 2020

Grants, honors & awards

- COMSATS Institute of Information Technology. Position holder scholarship during Bachelors, Pakistan.
- Gold Medal for securing first position in Bachelor of science in Electrical computer Engineering.
- Secured 2215 Graduate Scholarship Program for International Students, Turkey.
- Secured Chinese Government Scholarship Program for Masters in Control Systems.
- Secured POLITECNICO DI MILANO Silver scholarship, Italy.
- Korean Government Scholarship Program for Masters in Electrical Engineering,NIIED.

Personal Skills

Language proficiency

English (TOEFL), Korean (TOPIK), Punjabi (Mother tongue), Urdu (National language), Dutch (A2 level), Chinese (B1 level)