Sidra Hanif

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EDUCATION

TEMPLE UNIVERSITY
PhD, Computer and Information Science
Aug 2017 - May 2023 (exp) |
Philadelphia, PA
Advisor: Prof. Dr. Longin Jan Latecki

UET, LAHORE
MS, Electrical Engineering
April 2016 | Lahore, PK

UET, LAHORE
BS, Electrical Engineering
Aug 2012 | Lahore, PK

SKILLS

Languages: **Python**, **JAVA**, C/C++
Frameworks: **PyTorch**, **Caffe**, **Tensorflow**,
MatconvNet, OpenCV, CUDA, $\mathcal{L}$atex

INTERESTS

Machine learning · Object detection ·
Similarity learning· Large scale image
retrieval · Aerial image analysis

TEACHING

Problem Solving and Programming in
Python · Mathematical Concepts in
Computing · Digital Logic Design · Electric
Circuits · Communication Systems

COURSES

Design and Analysis of Algorithm · **Data
Structures** · **Computer Vision** ·
Knowledge Discovery and Data Mining ·
Advanced Machine Learning ·
Programming Techniques · **Deep
Learning** · Probability and Random
Processes · Optimization Theory ·
Machine Learning and Pattern
Recognition · Digital Signal Processing

EXPERIENCE

INDUSTRY EXPERIENCE

Quantum Design Inc.| Image Processing Engineering Intern
May 2019 - Aug 2019 | San Diego, CA

- Localize objects in microscopic images using single shot detection algorithm with absolute accuracy.
- Key-point detection in nanoscale images using multi order difference of distance loss funtion.

RESEARCH EXPERIENCE

Temple University | Graduate Research Assistant
Sep 2017 - Present | Philadelphia, PA

- Constructed a Graph Convolutional Network using text-image query for image search
- Designed a unified deep convolutional architecture for coherent object's localization and retrieval. On natural images, the retrieval rate is **86%** as compared to **73%** provided by state-of-the-art method.

Al-Khwarizmi Institute of Computer Science, PK | Research Officer
Mar 2014 – Sep 2015 | Lahore, PK

- Developed an automated building detection framework for dense urban scenes of multi-temporal and multi-spectral Google earth imagery combining both low and high level feature embeddings. The framework is evaluated on the Google earth images containing **1120 buildings**. For the same detection rate of **86%**, it reduced the false alarms by **40%** and repeated detection by **20%**.
- Implemented a web service using **C++ .NET Framework** for automated acquisition/processing of weather data from MODIS (MODrate resolution Imaging Spectroradiometer) web repository for disease surveillance.

PUBLICATIONS

Sidra Hanif, Chao Li, Anis Alazzawe, Longin Jan Latecki, Image Retrieval with Similar Object Detection and Local Similarity to Detected Objects, 16th Pacific Rim International Conference on Artificial Intelligence (PRICAI), 2019

ACTIVITIES

- Review research article for Journal of Electronic Imaging, SPIE. (2018) and Computer Vision and Image Understanding, Elsevier (2019)
- AnitaB.org active member 2020
- Graduate research participant in Amazon re:MARS 2019

AWARDS

- GHC student scholarship 2020
- NSF travel grant for PRICAI 2019
- Amazon Research Award travel grant for re:MARS 2019
- Fellowship by Signedcards.com 2022