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
BS, MS Electrical Engineering
Aug 2012, April 2016 | Lahore, PK

SKILLS

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

INTERESTS

Handwriting strokes recovery · Handwritng detection · Similarity learning· Large scale image retrieval

TEACHING

Problem Solving and Programming in Python · Mathematical Concepts in Computing · Digital Logic Design · 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

AWARDS

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

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 nano scale images using multi-order difference of distance loss function.

RESEARCH EXPERIENCE

Research fellowship, http://signedcards.com
Jan 2022 - Present | Philadelphia, PA

- Build the robust word detection framework with character regions awareness achieving **mAP@0.5 0.895** on a full-page handwritten document datasets
- Developed and implemented the full-page stroke trajectory recovery design for Signed Inc

Temple University | Graduate Research Assistant
Sep 2017 - Fall 2021 | Philadelphia, PA

- 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 Google earth imagery. For the same deetction accuracy **86%**, it reduced the false alarms by **40%** and repeated detection by **20%**.
- Implemented a web service using **C++ .NET Framework** for automated acquisition of weather data from MODIS (Moderate Resolution Imaging Spectroradiometer) 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
- **Sidra Hanif**, Longin Jan Latecki, Full-page Stroke Trajectory Recovery for Handwritten documents, pre-print, 2022
- **Sidra Hanif**, Longin Jan Latecki, Graph Aggregation on Multi-modal Embeddings for Greeting Cards Datasets, pre-print, 2022

ACTIVITES

Reviewer for Journal of Electronic Imaging, SPIE. (2018) and Computer Vision and Image Understanding, Elsevier (2019)