

# M. Kamran Janjua

## Curriculum vitae

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## Education

- 2016–Present **Bachelor of Engineering in Computer Science**,  
*National University of Sciences and Technology (NUST)*, Islamabad, Pakistan.  
**CGPA - 3.63/4.00, Percentage - 91%**
- 2014–2016 **Higher Secondary School Certificate (HSSC)**,  
*Pakistan International School*, Doha, Qatar.  
**Percentage - 87%**

## Experience

- 2018–Present **Research Assistant at ARTE Lab**, *University of Insubria, Varese, Italy*.  
The Applied Recognition Technology Laboratory (Arte-Lab) is a research laboratory within the Department of Theoretical and Applied Science (DiSTA) at Università degli Studi dell'Insubria advised by Dr. Ignazio Gallo. Following is a roughly chronological overview of my work in the lab.
- **Loss Functions for Fat-Tailed Distribution in large scale Face Recognition**  
I worked on developing efficient loss functions and optimization techniques to reduce long-tailedness and class imbalance in the large-scale datasets since traditional loss functions do not penalize the inter and intra class variations effectively.
  - **Multimodal Deep Learning for Image Retrieval**  
I am working on discriminatively embedding the two modalities, text and visual, onto a shared visual-textual space. Current approaches employ multiple networks for each modality, my work focuses on exploring marker based techniques for dual modalities.
- 2016–Present **Research Assistant at TUKL-NUST Research and Development Center**, *NUST, Islamabad, Pakistan*.  
TUKL-NUST is a research and development center setup by a joint collaboration of TUKL, Germany, and NUST, Islamabad advised by Dr. Faisal Shafait. Following is a roughly chronological overview of my work in the lab.
- **Real Time Scene Text Detection & Recognition**  
Optical Character Recognition for scene images is a rather very important and difficult task. My work was to research and implement an end-to-end trainable architecture and deploy it on IOS to achieve real time results. The IOS model runs on 30fps currently.
  - **Postal Address Parsing**  
Parsing of non-standardized addresses is a challenging task since many standard sentence taggers fail to perform well on non-standardized postal addresses. I worked to implement an end-to-end trainable deep learning based solution to tackle the problem.
  - **Underwater Video Data Collection of MahSheer in Murky Waters**  
Data collection is an extremely important part of data driven solutions. I was active in a small group working to collect underwater videos of an endangered specie for non-invasive sampling for a project funded by DAAD, Germany. We designed a system to capture underwater videos in the rivers.

- 2017–2018 **Teaching Assistant for Fundamentals of Computer Programming,**  
*School of Electrical Engineering & Computer Science, NUST, Islamabad, Pakistan.*  
I was teaching assistant for the introductory computer science course. My main responsibilities were to grade assignments, quizzes and end semester projects. Additionally, I had to deliver a brief lecture once a week.
- 2015–2016 **Research Intern at AI Kindi Lab for Computing,**  
*Qatar University, Doha, Qatar.*  
AI Kindi Research Lab is a research center focusing on research in the vital area of computer and information sciences and engineering. Following is the detail regarding the project I worked on while interning in the lab.
- **Synchronous Drone System for Building Surveillance**  
Real time feedback regarding the under-construction building is crucial to stable construction. I worked on building synchronous drone system for under-construction building surveillance. My work was focused on assembling the drones and synchronizing them. The drones were built using ardupilot.

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## Awards and Accolades

- 2018 Tsinghua's Deep Learning Summer School [Funded] [Passed]  
2018 Summer Internship at Sharif University of Technology, Tehran [Passed]  
2016 - Dean's list for high achievers (all semesters)  
2016 Gold Medal, HSSC-II, 1st in batch  
2015 Silver Medal, SSC-II, 2nd in batch

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## Standardized Scores

- IELTS 8.5 Listening. 8.0 Reading. 7.0 Writing. 7.5 Speaking.  
ACT 27 overall.  
ACT English 36/36 Writing.

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## Skills

- C, C++ I can program in C and C++ well. I did my data structure's coursework and project in C++. Code: <https://github.com/kjanjua26/Algorithms>.
- Python, NumPy, OpenCV Python combined with NumPy is my primary framework for rapid prototyping and almost all of the research work done in lab is in Python.
- TensorFlow, PyTorch, Keras I have used Keras and Tensorflow to train models on CPU and GPUs in the past. Recently, I've shifted to PyTorch because I find the dynamic graph generation extremely convenient.
- Linux, Vim, Bash I managed a linux based multi-GPU server of TUKL-NUST Lab for a period of almost 6 months.

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## Interests

- Problem Solving
- Reading
- Cooking
- Writing

- Playing Guitar

- Teaching

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## MOOCs

- Learning from Data

- Statistics 110: Probability

- Convolutional Neural Networks for Visual Recognition

- Deep Learning with Tensorflow

- Convex Optimization

- Deep Learning for Self Driving Cars