

# TAIMOOR TARIQ | Curriculum Vitae

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## SUMMARY

I am a third-year PhD Student aiming to make real-time Virtual Reality (VR) realistic through a deeper understanding of human vision.

## EDUCATION

### UNIVERSITÀ DELLA SVIZZERA ITALIANA (USI)

PhD in Informatics

Concentration: Computer Graphics and Human Visual Perception

2020 - current

Lugano, Switzerland

### KOREA ADVANCED INSTITUTE OF SCIENCE AND TECHNOLOGY (KAIST)

MS in Electrical Engineering

Concentration: Visual Computing and Machine Learning

CGPA: 4.0/4.3

KAIST Graduate Fellowship Awardee

2017 - 2019

Daejeon, South Korea

### NATIONAL UNIVERSITY OF SCIENCES AND TECHNOLOGY (NUST)

BS in Electrical Engineering

Concentration: Digital Systems and Signal Processing

CGPA: 3.83/4.0

Merit Scholarship Awardee (Top 3% of class)

2013 - 2017

Islamabad, Pakistan

## EXPERIENCE

### DOCTORAL RESEARCH ASSISTANT

Perception, Display and Fabrication Group - USI

Mentor: Dr. Piotr Didyk

Working on understanding human visual perception in immersive environments to improve real-time rendering for VR-headsets

2020 - current

Lugano, Switzerland

### GRADUATE RESEARCH ASSISTANT

Video and Image Computing Lab - KAIST

Mentor: Dr. Munchurl Kim

Worked on integrating human perception models with the Deep Learning pipeline for Perception-Oriented Image Super-Resolution

2017 - 2019

Daejeon, South Korea

### UNDERGRADUATE RESEARCH ASSISTANT

Neuro-informatics Research Group - NUST SEecs

Mentor: Dr. Awais Kamboh

Designed a real-time signal processing algorithm for neural spike detection and sorting. The algorithm was designed for future implantable neural chips for neuro-prosthetics and rehabilitation

2016 - 2017

Islamabad, Pakistan

### INTERN DIGITAL SYSTEM DESIGN ENGINEER

Center for Advanced Research in Engineering (CARE)

Worked on the design for a digital architecture for an automatic gain control (AGC) for software-defined radio's

7/2015 - 8/2015

Islamabad, Pakistan

## KNOWLEDGE AREAS

Visual Computing, Machine Learning, Applied Perception, Signal Processing

## TEACHING

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**Teaching Assistant:** Computer Graphics (Fall 2020), USI-Lugano

**Teaching Assistant:** Computer Vision & Pattern Recognition (Spring 2021), USI-Lugano

**Teaching Assistant:** Computer Graphics (Fall 2021), USI-Lugano

**Teaching Assistant:** Computer Vision & Pattern Recognition (Spring 2022), USI-Lugano

## PUBLICATIONS

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### **Noise-based Enhancement for Foveated Rendering**

ACM Transactions on Graphics (SIGGRAPH 2022)

Taimoor Tariq, Cara Tarhan Tursun and Piotr Didyk

### **Why are Deep Representations Good Perceptual Quality Features?**

European Conference on Computer Vision (ECCV 2020)

Taimoor Tariq, Okan Tarhan Tursun, Munchurl Kim and Piotr Didyk

### **A HVS inspired Attention to Improve Loss Metrics for CNN-based Perception-Oriented Super-Resolution**

International Conference on Computer Vision Workshops (ICCVW 2019)

Taimoor Tariq, Juan Luis Gonzalez Bello and Munchurl Kim

### **Computationally efficient fully-automatic online neural spike detection and sorting in presence of multi-unit activity for implantable circuits**

Computer Methods and Programs in Biomedicine, 2019

Taimoor Tariq, Muhammad Hashim Satti, Hamid Mehmood Kamboh, Maryam Saeed and Awais Mehmood Kamboh

### **Low SNR Neural Spike Detection using Scaled Energy Operators for Implantable Brain Circuits**

IEEE Engineering in Medicine and Biology Conference (EMBC 2017)

Taimoor Tariq, Muhammad Hashim Satti, Maryam Saeed and Awais Mehmood Kamboh