TAIMOOR TARIQ | Curriculum Vitae

tariqt@usi.ch • Personal Webpage • Twitter • Google Scholar

About me

PhD Student interested in human perception and real-time graphics; aiming to make real-time Virtual Reality (VR) realistic through a deeper understanding of human vision.

Education

UNIVERSITÀ DELLA SVIZZERA ITALIANA (USI)
2020 - current
PhD in Informatics
Lugano, Switzerland
Concentration: Computer Graphics and Human Visual Perception

KOREA ADVANCED INSTITUTE OF SCIENCE AND TECHNOLOGY (KAIST)
2017 - 2019
MS in Electrical Engineering
Daejeon, South Korea
Concentration: Visual Computing and Machine Learning
CGPA: 4.0/4.3
KAIST Graduate Fellowship Awardee

NATIONAL UNIVERSITY OF SCIENCES AND TECHNOLOGY (NUST)
2013 - 2017
BS in Electrical Engineering
Islamabad, Pakistan
Concentration: Digital Systems and Signal Processing
CGPA: 3.83/4.0
Merit Scholarship Awardee (Top 3% of class)

Experience

RESEARCH SCIENTIST INTERN
10/2022 - 6/2023
Meta (formerly Facebook)
Sunnyvale, California, USA
Mentors: Alex Chapiro*, Ajit Ninan, Nathan Matsuda, Douglas Lanman
Working with the Perceptual Graphics sub-group at the Applied Perception Science team at Facebook Reality Labs. Working on perceptually optimized computational display algorithms for real-time VR systems

DOCTORAL RESEARCH ASSISTANT
2020 - current
Perception, Display and Fabrication Group - USI
Lugano, Switzerland
Mentor: Piotr Didyk
Working on understanding human visual perception in immersive environments to improve real-time rendering for VR-headsets

GRADUATE RESEARCH ASSISTANT
2017 - 2019
Video and Image Computing Lab - KAIST
Daejeon, South Korea
Mentor: Munchurl Kim
Worked on integrating human perception models with the Deep Learning pipeline for Perception-Oriented Image Super-Resolution

UNDERGRADUATE RESEARCH ASSISTANT
2016 - 2017
Neuro-informatics Research Group - NUST SEECS
Islamabad, Pakistan
Mentor: Awais Kamboh
Designed a real-time signal processing algorithm and its corresponding hardware architecture for unsupervised neural spike detection and sorting. The system was designed for future implantable neural chips

Research interests

Visual Computing, Computational Displays, Audio/Visual Perception, Real-Time Rendering, Augmented/Virtual Realities

Teaching

Teaching Assistant: Computer Graphics (Fall 2020, Fall 2021), USI-Lugano

Teaching Assistant: Computer Vision & Pattern Recognition (Spring 2021, Spring 2022)

Teaching Assistant: Image & Video Processing (Spring 2023), USI-Lugano

Publications

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