Taimoor Tariq

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ABOUT ME

I am a second-year PhD student at USI Lugano. My work focuses on understanding human visual perception and using perception to improve algorithms for novel display systems.

EDUCATION

National University of Sciences and Technology (NUST), Pakistan

B.Sc. Electrical Engineering **2017**

(Concentration: Digital Systems and Signal Processing)

- CGPA: **3.83**/4.0 (Top 3% of class)

Korea Advanced Institute of Science and Technology (KAIST), South Korea

M.Sc. Electrical Engineering **Aug-2019**

(Concentration: Machine Learning and Visual Computing)

- CGPA: **4.0**/4.3

Università della Svizzera italiana, Switzerland

Ph.D. Informatics **Current**

(Concentration: Perception and Visual Computing)

WORK/RESEARCH EXPERIENCE

Center for Advanced Research in Engineering (CARE) Pvt Ltd, Islamabad, Pakistan **Intern Digital Design Engineer (2015)**

- Designed a "**Digital Automatic Gain Control Architecture for a Military Grade Software Defined Radio."**

NUST- SEECS Neuro-informatics Research Lab **Undergraduate RA (2016-2017)**

- **Unsupervised Neural Spike Detection and Sorting for Implantable Integrated Brain Circuits.**
- **Group PI: Dr. Awais M. Kamboh**

KAIST- Video and Image Computing Lab **Graduate RA (2017-2019)**

- **Applied Perception and Deep Learning for Perception-Oriented Super-Resolution.**
- **Group PI: Dr. Munchurl Kim**

USI- Perception, Display and Fabrication Group **PhD Student (2020-)**

- **Perceptually-Driven Optimizations of Graphics Content for Novel Displays (ERC Starting Grant)**
- **Group PI: Dr. Piotr Didyk**

RESEARCH INTERESTS.

Human Visual Perception, Computational Imaging, Photo-realistic Graphics/Imaging, Virtual Reality, Cognitive Psychology.

PUBLICATIONS

- **Taimoor Tariq**, M.H Satti, M. Saeed and A.M. Kamboh, "Low SNR Neural Spike Detection using Scaled Energy Operators for Implantable Brain Circuits". *39th Annual International Conference of the IEEE Engineering in Medicine and Biology Society* (EMBC'17)
- **Taimoor Tariq**, M.H. Satti, M. Saeed, H.M. Kamboh and A.M. Kamboh, "Computationally Efficient, Fully Automatic Neural Spike Detection and Sorting for Implantable Brain Circuits", *Computer Methods and Programs in Biomedicine, 2019* ***(IF: 3.424)***.
- **Taimoor Tariq**, J. Gonzalez and M. Kim. "A HVS-inspired Attention to Improve Loss Metrics for CNN-based Perception-Oriented Super-Resolution.", *ICCV Workshops 2019*
- **Taimoor Tariq**, O.T Tursan, M. Kim, P. Didyk. "Why Are Deep Representations Good Perceptual Quality Features?", *ECCV 2020*