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B202, Faculty of Engineering and Applied Sciences
Riphah International University,
Sector I-14, Islamabad



EXPERIENCE

Sept 2015 -
Present

Assistant Professor

Department of Biomedical Engineering
Faculty of Engineering & Applied Sciences
Riphah International University
Islamabad, Pakistan

Major Administrative Responsibilities

Acting HoD, Biomedical Engineering Department, July 01- till date

Assistant Dean, RARE/ ORIC, Feb 01, 2019 – till date

Member, Institutional Performance Evaluation (IPE) Team, Since 2019

Member, Review panel for MS/MPhil and PHD programs of Riphah.

Focal Person, Outcome Based Education (OBE) Committee,

Other Responsibilities

- Member, Board of Faculty
- Member, Board of Studies
- Member, Continuous Quality Improvement (CQI) Committee
- Convener, IEEE Student Branch
- Focal person, Industrial Liaison Committee
- Incharge admissions, Biomedical Engineering department
- Member, Graduate Examination Committee
- Student Mentor
- Superintendent Examinations (one year)

July 2015 -
Sept 2015

Assistant Professor

The University of Faisalabad
Faisalabad, Pakistan

April 2014 -
March 2015

Software Developer (R&D)
B.M. Tech Worldwide Co., Ltd
Seoul, Korea

Development and evaluation of Dual Energy X-ray Absorptiometry (DEXA) machine. Major work included

- Software development
- Firmware development
- Machine testing
- Conducting research to improve the product

Sept 2010 -
Feb 2015

Research Assistant
Kyung Hee University
Republic of Korea

Sept 2009 -
Aug 2010

Research Assistant
COMSATS University

Abbottabad, Pakistan



EDUCATION

2010 -2015

PHD (MASTERS COMBINED)
BIOMEDICAL ENGINEERING
KYUNG HEE UNIVERSITY

Republic of Korea

Thesis Title: P300 Event Related Potential Based Brain Computer Interface: Smart Word Typing System

2004 -2008

BS, ELECTRONICS ENGINEERING
COMSATS INSTITUTE OF INFORMATION TECHNOLOGY

Abbottabad, Pakistan

Thesis Title: Imagined Hand Movement Based Brain Computer Interface (BCI) to Control a Robotic Car

Research Fundings

Title	Funding Agency	Amount (PKR)	Role	Status
Urdu sign language to speech conversion for mute people	HEC - LCF	9.74 million	PI	Ongoing
An Affordable brain-computer interface (BCI) for upper limbs paralyzed patient	HEC - NRPU	2.637 million	Co-PI	Completed
A P300 event related potential based BCI system for Urdu speller	ORIC / RARE	150,000	Co-PI	Ongoing
Modular Hybrid Prosthetic arm design	ORIC / RARE	150,000	PI	Completed
Development of wireless-based wearable sensors systems for athletes	ORIC / RARE	150,000	Co-PI	Completed
Robotic hand controlled by EMG Signals and Sensors system	ORIC / RARE	50,000	PI	Completed
Automatic detection of emotional states using EEG	ORIC / RARE	50,000	PI	Completed
Detection of neuroplasticity by using a low cost Open BCI system	National Grassroots ICT Research Initiative (NGIRI)	43,035	Supervisor	Completed
Robotic Hand Controlled by EMG signals with a feedback sensor system	NGIRI	65,030	Supervisor	Completed
Early diagnosis of Parkinson's disease using speech recognition	NGIRI	54,500	Supervisor	Completed
Correlation of balance assessment tool with motion analysis parameter	NGIRI	37,740	Supervisor	Completed

Supervised Research / Thesis

Total research students supervised

	Completed	In-Progress
Masters	29	5
PhD	0	5

Patents and Publications

Patent

Faraz Akram, Hee-Sok Han, and Tae-Seong Kim, “**Word input brain-computer interface system using p300 brain-evoked potential and word input method**”, WO/2015/178558, issued Nov 26, 2015

Journal Papers

Usman Masud, M.R. Amirzada, Hassan Elahi, **Faraz Akram**, et. al.,” Design of Two-Mode Spectroscopic Sensor for Biomedical Applications: Analysis and Measurement of Relative Intensity Noise through Control Mechanism”, Applied Sciences, Accepted, 2022.

(Impact Factor: 2.679)

MS Orakzai, S Amin, ZA Khan, **Faraz Akram**, “Fast and highly accurate estimation of feedback coupling factor and linewidth enhancement factor for displacement sensing under different feedback regimes, Optics Communications, 508, 127751, 2022

(Impact Factor: 2.31)

Usman Masud, Fathe Jeribi, M. Alhameed, **Faraz Akram**, Ali Tahir, Mohammad Yousaf Naudhani, “Two-Mode Biomedical Sensor Build-up: Characterization of Optical Amplifier”, Computers, Materials & Continua 3(70):5487-5489, 2021

(Impact Factor: 3.772)

U. Masud, F. Jeribi, M Alhameed, A. Tahir, Q. Javaid, **Faraz Akram**, “Traffic Congestion Avoidance System using Foreground Estimation and Cascade Classifier” IEEE Access, 2020.

(Impact Factor: 3.745)

Faraz Akram, Seung Moo Han, and Tae-Seong Kim. “An Efficient Words Typing P300-BCI System Using a Modified T9 Interface and Random Forest Classifier.” Computers in biology and medicine, 56: 30-36. 2015.

(Impact Factor: 4.589)

Faraz Akram, Hee-Sok Han, and Tae-Seong Kim. “**A P300-based brain computer interface system for words typing.**” Computers in biology and medicine 45 (2014): 118-125.

(Impact Factor: 4.589)

Khan O.I, Faisal Farooq, **Faraz Akram**, Mun-Taek Choi, Seung Moo Han, and Tae-Seong Kim. “**Robust extraction of P300 using constrained ICA for BCI applications.**” Medical & biological engineering & computing, Vol 50, no. 3 (2012): 231-241.

(Impact Factor: 2.36)

Muhammad Sadiq, **Faraz Akram**; Saqib Amin, Zohaib Ahmad Khan, “Event-Related Potential Based Brain-Computer Interface for Controlling a Smart Home”, PLOS one (Submitted: Under Review), 2021.

Usman Masud, Tareq Saeed, **Faraz Akram**, Altaf Akbar, “Programmable Unmanned Aerial Vehicle for Laser-based Biomedical Sensor”, Sensors, (Submitted: Under Review), 2021

Usman Masud, Tareq Saeed, **Faraz Akram**, Yousuf Khan, Hassan Elahi, “Development of Dual Mode Sensor based on Absorption Spectroscopy: Technical Aspects of Optical Receiver in the Stability of Laser's Intensity Noise”, micromachines (Submitted: Under Review), 2021

Conference Papers

Azhar Iqbal, **Faraz Akram** and Muhammad Ihtaram Ul Haq, "A comprehensive assistive solution for visually impaired person", Smart Systems and Emerging Technologies, SMARTEC, 2022

Arslan Javaid, Muhammad Sadiq, and **Faraz Akram**, "Skin cancer classification using image processing and machine learning", IBCAST, 439-444, 2021

Ammad Ud Din, **Faraz Akram** and M. Shahzad, "An Efficient Low Voltage Drop Diode Circuit for Piezoelectric Energy Harvesting Systems", 3rd Asian Conference on Science, Technology & Medicine, Dubai, UAE, Feb 2019.

Usman Masud, Irum Baig, **Faraz Akram** and T. S. Kim, "A P300 brain computer interface based intelligent home control system using a random forest classifier," 2017 IEEE Symposium Series on Computational Intelligence (SSCI), Honolulu, Hawaii, 2017, pp. 1-5.

Ahmad Fawad, Tanveer ul Haq, and **Faraz Akram**. "Design and implementation of low cost multi-threaded haptic feedback device." In Electronic Devices, Systems and Applications (ICEDSA), pp. 1-4. IEEE, 2016.

Usman Masud, **Faraz Akram**, and M. I. Baig, "Behavioural modeling of an optical chopper for Intra Cavity Absorption Spectroscopy" 2016 International Conference on Computing, Electronic and Electrical Engineering (ICE Cube), pp. 22-26, 2016

Faraz Akram, Jeong Tai Kim, Tae-Seong Kim, "Smart home control through P300 Brain Computer Interface", In 12th International symposium on sustainable healthy buildings, Seoul, Korea, November 2014.

Hee-Sok Han, Seo Young Hwang, **Faraz Akram**, Hyun Jae Jeon, Sang Beom Nam, Sang Beom Jun, Jeong Tai Kim, and Tae-Seong Kim. "Neural Activity Modulation via Ultrasound Stimulation Measured on Multi-Channel Electrodes." In Proceedings of the World Congress on Engineering, London, July 2014.

Faraz Akram, Hee-Sok Han, and Tae-Seong Kim. "A P300-Based Word Typing Brain Computer Interface System Using a Smart Dictionary and Random Forest Classifier." In ICCGI 2013, The Eighth International Multi-Conference on Computing in the Global Information Technology, Nice, France, pp. 106-109. 2013.

Faraz Akram, M. K. Metwally, Hee-Sok Han, Hyun-Jae Jeon, and Tae-Seong Kim. "A novel P300-based BCI system for words typing." In IEEE International Winter Workshop on Brain-Computer Interface (BCI), Seoul, Korea, pp. 24-25. IEEE, 2013.

Faraz Akram, Hee-Sok Han, Hyun Jae Jeon, Kyungmo Park, Seung-Hun Park, Jinsung Cho, and Tae-Seong Kim. "An efficient words typing P300-BCI system using a modified T9 interface and random forest classifier." In Engineering in Medicine and Biology Society (EMBC), 2013 35th Annual International Conference of the IEEE, Osaka, Japan, pp. 2251-2254. IEEE, 2013.

Faraz Akram, Faisal Farooq, and Tae-Seong Kim "Classification of P300 Using Random Forests for Brain Computer Interface", Korean Society for Medical and Biological Engineering (KOSOMBE) (2011).