

# Cover Letter & Curriculum Vitae

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*“If you change the way, you look at things, the things you look at, change”*

Wayne Dyer

My formative years were spent in UAE and Saudi Arabia which enabled me to gain excellent communication skills in multiple languages like Arabic and English alongside real life experience of diversity.

After finishing my college education in Jeddah , K.S.A, I moved to Islamabad for my undergraduate degree where I attained my Bachelors in Computer Engineering from the highly ranked **COMSATS University Islamabad**. After completion of my undergraduate degree I achieved my first postgraduate degree Masters in Science in Computer Engineering from **University of Engineering and Technology (UET), Taxila**.

In 2006, I was awarded the faculty development fellowship from Higher Education Commission of Pakistan and I was accepted at **University of Sussex, UK** for Masters in Embedded Systems. In 2008, after achieving distinction in my degree at University of Sussex my scholarship was extended for PhD studies.

I completed my PhD in 2013, where my thesis explored the defense and security applications of illumination effects in security footages. I specifically chose this area owing to the over looming terrorism threat to Pakistan.

During my PhD studies, I was selected a participant in the first cohort of the prestigious Enterprisers program of the **Judge Business School, University of Cambridge** in 2009. However, after the first session I was offered a position as a facilitator which continued till 2012. My time at Judge business school’s ‘**Center for Entrepreneurial Learning**’ enabled me to gain valuable life skills necessary to guide and motivate innovative ideas and nurture them to fruition as social enterprises. Furthermore, at University of Sussex I was elected as a student union officer for operations and was the first ever Pakistani to be selected at this position.

During my stay in the United Kingdom, I actively campaigned for causes like enabling children of migrant families having low income and no family history of University education to gain access to prestigious universities on government and private sector funded initiatives like Aim Higher , and the Brilliant Club. The goal was to enable them to gain university education, so that they can break the cycle of low paying jobs as was

expected for most of them. During this program I successfully mentored 28 children who later got enrolled in the top 10 universities in the UK including Oxford University.

After the completion of my PhD studies in 2013, I succeeded in availing the **Tutorial Fellowship** in Engineering and Design at University of Sussex. During my time as a fellow I participated in projects as Google Smart Glass and how this can have a social impact.

In 2015, after spending nearly a decade in the UK, I returned back to Pakistan and joined 'COMSATS University Islamabad' in the Department of Computer Science. I was also assigned to manage an entity called '**Inter Islamic Network on Information Technology**' (INIT) [www.init.org.pk](http://www.init.org.pk) which is an official network of COMSTECH funded by the Government of Pakistan hosted by COMSATS University Islamabad. The INIT has 12-member states and my role was to increase the outreach and international collaboration.

My first impulse was to initiate a program on ICT for Development which was a much-needed area of collaboration in majority of the OIC member countries. For this purpose, I relied upon my network of collaborators from UK and conducted the first workshop on mainstreaming the marginalized with the **UNESCO Chair in ICT4D** based at University of London at Royal Holloway. The workshop was a vehicle to effectively engage civil societies, government organizations, think tanks, academics, policy makers and political leadership in working towards the main predicaments for the marginalized communities and where technology can play a role.

For this purpose, the mind maps generated resulted in the conceptualization of roadmap disability was triggered as priority concern in five OIC member states. A landmark field study was initiated in this regard in collaboration with the UNESCO Chair in ICT4D, United Nations and INIT. My role as the main resource investigator alongside a highly experienced Principle Investigator enabled me to gain valuable field work experience with relevant government functionaries in Qatar, Malaysia, Tunisia, Jordan and different parts of Pakistan.

The focus was to conduct a gap analysis of public policy preventing access to the disabled to improve their lives.

The study was well received and paved the way for an Expert Meeting conducted in collaboration with **United Nations Economic and Social Commission for Asia and the Pacific in Bangkok, Thailand**<sup>1</sup>. My work with UNESCAP also resulted in getting INIT its role assigned in the **STI network on Science And Technology (ARTNET)**<sup>2</sup> created by the UNESCAP.

Also, as a part of INIT day to day activities I routinely engage with the Ministry of IT&T and am in the process of developing regional hub of open source assistive technologies for the persons with disabilities. During my current tenure at INIT, training workshops and

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<sup>1</sup> <https://www.unescap.org/events/expert-meeting-disability-inclusive-technology-and-innovation>

<sup>2</sup> <https://artnet.unescap.org/sti>

capacity building events have been conducted in five OIC countries. My efforts also resulted in developing linkages with the **Islamic Development Bank (IDB)**, in terms of their US\$500 Million transform fund. Under the umbrella of ICT for Development recently one of my articles got published in a prestigious journal **ITID**<sup>3</sup> focusing on gender, mobile and sexual harassment. Furthermore, I am a well published author with a recent book chapter (<https://novapublishers.com/shop/advances-in-pattern-recognition-research/>) printed in collaboration with colleagues at **NASA**. I routinely lecture at public forums and teach courses at the university on Pattern Recognition, Principles of Software Design , Database Systems , Human Computer Interaction, Embedded Systems, Image Processing, and Microprocessor Design. During the course of life I have travelled to Canada, Saudi Arabia , UAE , Kuwait , Qatar , Jordan , United Kingdom , Turkey , Thailand , Malaysia , Tunisia , Italy , Czech Republic , France , Switzerland and United States of America for official and personal missions.

I am routinely conducting training workshops on accessibility and universal design in collaboration with colleagues from UNESCO Chair in ICT4D at the World Summit on Information Sciences organized by the **International Telecommunication Union of United Nations** in Geneva , Switzerland (<https://news.itu.int/advancing-ict-accessibility-wsis/>) for the last three years. At the WSIS Forum 2020 virtually we have convened two workshops on Digital Accessibility in a COVID 19 World and Changing Men's Attitudes to Women and Technology which were well received by more than 200 participants.

Furthermore, my work with assistive technologies for Persons with Disabilities has garnered interest from **Massachusetts Institute of Technology (MIT)** media laboratory.

I am also a member of Ministry of Science and Technology's committee on conduction of National Science Conference and popularization of STI Agenda at grassroots level in Pakistan. Furthermore, deal with Ministry of IT and Telecommunications routinely for matters pertaining to funding of INIT , departmental audits and international liaison with UN bodies. Recently have also been made a member of National ICT council for Persons with Disabilities with the core focus on developing an Assistive Technology ecosystem in Pakistan.

As a technologist I have aspired to focus my efforts on the impact of technology for social uplift of marginalized classes and promote an ethical use of technology rather than just publishing impact factor research.

### **Expertise of Focal Interest**

- I can utilize my linkages to establish a UNESCO Chair;
- I can conduct Capacity Building and Training Programs with OIC countries;
- I can establish linkages with UNESCO Chair in ICT4D, at University of London;
- I possess skills for development of an Assistive Technology Center for marginalized communities.

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<sup>3</sup> <https://itidjournal.org/index.php/itid/article/view/1558>

# AKBER ABID GARDEZI

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COMP/3767

## Educational Qualifications

### University of Sussex , United Kingdom

PhD in Engineering

Thesis Title: Pattern Recognition Employing Spatially Variant Unconstrained Correlation Filters

Jan 08 to Oct 13

### University of Sussex , United Kingdom

MSc in Embedded Digital Systems

Oct 06 to Oct 07

### Center for Advanced Studies in Engineering (CASE), Pakistan

Masters of Science in Computer Engineering

Jan 05 to Aug 06

### COMSATS University Islamabad, Pakistan

Bachelors in Computer Engineering

Sep 00 to June 04

### Pakistan International School Jeddah, K.S.A

Higher Secondary School Certificate

1998 to 2000

### Pakistan International School Jeddah , K.S.A

Secondary School Certificate

1996 to 1998

## Professional Experience

COMSATS University, Islamabad

Assistant Professor / Manager Inter Islamic Network on IT

Aug 15 – Date

School of Engineering , University of Sussex , Brighton UK

Postdoctoral Tutorial Research Fellow

June 13 – July 15

Enterprisers , Judge Business School , University of Cambridge

Facilitator/Trainer

May 10 – Jan 12

The Brilliant Club, London, UK

Advanced Skills Mentor

Oct 09 -- May 10

COMSATS Institute of Information technology , Islamabad

Research Associate/Lecturer (Multimedia Embedded Systems)

Sept 04 – Sept 06

AZIM Tech Pvt. Ltd , Islamabad (Telecom Startup)

Technical Manager

Jan 05 -- Sept 06

## Ongoing Projects

1. Project Pakistan: OptiKey an Open Access Assistive Technology Platform (In collaboration with OptiKey London with a funding back of GBP 50,000 to be completed by end 2020)

2. Industrial liaison with Xylexa Inc. in development of novel breast cancer detection techniques

3. Development of Gap Analysis for Assistive Technology provision in five OIC member states (Pakistan, Qatar, Malaysia, Tunisia, Jordan)

## Selected Research Publications

1. Hassan, B., Unwin, T., & Gardezi, A. (2018). Understanding the darker side of ICTs: Gender, sexual harassment, and mobile devices in Pakistan. *Information Technologies & International Development (Special Section)*, 14, 1–17
2. F. Majeed , M. Shafiq , A. Ali , M. A. Hassan ,....., A. Gardezi , A. Irshad , (2019) 'Self-Citation Analysis on Google Scholar Dataset for H-Index Corrections' , *IEEE ACCESS* , Vol. 7
3. J. Rashid, S. SHAH, A. Irtaza, T. Mahmood, W. Nisar, M. Shafiq, A. Gardezi (2019) 'Topic Modeling Technique for Text Mining Over Biomedical Text Corpora Through Hybrid Inverse Documents Frequency and Fuzzy K-Means Clustering', *IEEE ACCESS* , Vol. 7

## Additional Skills

Have extensive skills in Python , C\C++, MATLAB , Assembly language , Embedded programming languages.

Extensive experience of leading and working as part of teams.

Good presentation and interpersonal skills.

Fluent in URDU, ENGLISH and PUNJABI language

Good understanding and communication skills in Arabic Language.

Certified 'Enterpriser' by Judge Business School, University of Cambridge

## Honors and Awards

Member Doctoral School Committee 07/08 , University of Sussex

Member SCITECH school Research Committee 08/09 , University of Sussex

Student Rep Department of Engineering and Design ,06/08 , University of Sussex

Student Union Elected Officer ,08/09 , University of Sussex

Member Union Council , 08/09 , University of Sussex

Member IEE ,UK

Member SPIE ,USA

Member IEEE ,USA

Registered Engineer, Pakistan Engineering Council (PEC)

Affiliated Member of UNESCO Chair in ICT4D

Saima Ammar Award on White Cane Safety Day 2019

## Research Interests

My research interests are mainly focused on image processing employing pattern recognition algorithms which are invariant to illumination changes. For my PhD I proposed a filter named SPOT-MACH which is an abbreviation for Spatial Domain Optimal Trade-Off Maximum Average Correlation Height Filter. The proposed SPOT-MACH can be used to maximize the height of the correlation peak in the presence of distortion and provides resistance to background clutter. A local normalization of the image using a fixed size kernel ensures in the case of a large illumination gradient that there are no false detections. Recently I was invited to present a paper in SPIE conference in Baltimore comparing the proposed technique to a popular feature transformation technique considered to be extremely robust. I am also in collaboration with the evolutionary robotics and Sensors Research groups at Sussex to develop a genetic algorithm for controlling a robot using vision markers.

For the last two years I am actively working with Persons with Disabilities for provision and development of indigenized assistive technologies.

## Hobbies and Interests

Enjoy social and outdoor activities, football and hockey other interests include pop-music and reading fiction novels.

## References

1. Prof. Tim Unwin  
Chairholder, UNESCO Chair in ICT4D, University of London  
[tim.unwin@rhul.ac.uk](mailto:tim.unwin@rhul.ac.uk)
2. Dr. Rupert Young  
Senior Reader in Engineering, University of Sussex  
[R.C.D.Young@sussex.ac.uk](mailto:R.C.D.Young@sussex.ac.uk)
3. Dr. Majid Iqbal Khan  
Head, Department of Computer Science  
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\*No Objection Certificate can be produced on demand from employer subject to successful transition to the next phase.