



LUMS

Department of Computer Science



Annual
Report

2016

**Syed Babar Ali School
Of Science and Engineering**

Message from the Chair

On behalf of Faculty of the Department of Computer Science, I am pleased to present the Annual Report 2016 of the Department. The year 2016 was an exciting year for us. During the year we welcomed largest number of students in our BS, MS and PhD Programmes. Also the graduating Class of 2016 had close to 100% employment rate in industry and placements at top universities around the world.

On the research front our faculty secured (PKR) 71,195,646 externally funded grants primarily from ICT R&D Fund and HEC. Internally we were able to win (PKR) 13,969,730 through FIF, STG and FTG grants. In terms of publications our Department published 14 journal, 24 conference and 5 workshop papers. All the journals and conferences were notable in their respective area of scholarship.

On the hiring front we were able to attract two new colleagues to the Department; Dr Yasir Mehmood in the area of Machine Learning and Social Analytics and Dr. Humaira Kamal in the area of High Performance Computing. Addition of these two has taken our PhD faculty strength to seventeen full time members.

Thanks to the funding from NMF and LUMS we were able to complete the new wing of the CS Department. This new space will give us much needed room for expansion. The new wing will have close to 15 new faculty offices, more than 115 research spaces spread over ten labs, a new Teaching Lab with 108 workstations and a couple of open spaces for future expansion.

To honor our late colleague Dr. Sohail Aslam, former students and colleagues from Techlogix, Arbisoft and 7vals have contributed to establish a new Teaching Lab capable of accommodating 60 students. Additionally, Zong has contributed towards establishing a 5G Networks and Communication Lab in the Department. This lab will house the latest equipment needed to pursue R&D activities in 5G Networks. In addition to these labs Pakistan Cricket Board (PCB) has donated a Biomechanics Lab. The primary purpose of this lab is to use high definition cameras and sensors for assessing action of Cricket bowlers.

The New Year brings us new challenges. But new challenges always bring new opportunities. We are hopeful that together we can elevate this Department to one of best in the Continent.

On Behalf of Computer Science Faculty

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1. Vision and Mission

The Department of Computer Science is part of the Syed Babar Ali School of Science and Engineering at LUMS. Its vision is to be the leading research-oriented department in the region while at the same time providing world class education to its students. The department promotes internationally acclaimed but locally relevant research that uplifts the community and contributes to technology infrastructure development in the region.

2. Programmes Offered

The Department of Computer Science offers a four years BS (undergraduate), two years MS and four year PhD degree programmes in Computer Science.

Undergraduate Programme

BS Computer Science

Students at undergraduate level are encouraged to be involved in the research work. Research opportunities focus both on fundamental research in theory of computation, computer networks, computer vision, data mining, software engineering, artificial intelligence and robotics, as well as on projects of practical socio-economic significance.

Graduate Programmes

MS Computer Science

The two-year MS Programme provides rigorous training that not only provides a reliable understanding of systems, processes and technologies but also equips students with the ability to design new and imaginative solutions to problems. The typical duration for completing the MS Programme is 2 years.

PhD Computer Science

The PhD Programme emphasizes on rigorous coursework and high quality research that should be published in peer-reviewed international conferences and journals. All PhD students are encouraged to tackle both coursework and research in parallel; success in both these components is a requirement for the award of the PhD degree. Students entering the PhD Programme must have an MS or MPhil degree. To graduate, students must earn a total of 42 credit hours from which 18 must be from coursework and 24 from research.

Major milestones that must be achieved for the successful completion of the PhD degree include clearing the GRE Subject Test with a score at the 60th percentile or above, comprehensive/qualifying examination, thesis proposal defense, thesis defense and a publication in an indexed journal. Students have 4 years to complete all graduation requirements.

2.1. Faculty Strength

**Including one joint appointment with Department of Electrical Engineering*

	Full-Time	Part-Time
Professor	3	
Associate Professor	4*	
Assistant Professor	10	
Teaching Fellow	3	

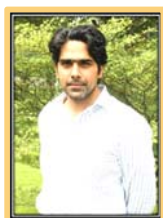
See Annexure I for detailed list of faculty members.

2.2. Student Strength

Academic Programme	BS	MS	PhD
Graduated in 2016	68	26	2
Current Active Students (expected to graduate in 2017)	284 (83)	98 (45)	16 (2)

3. New Members and Promotions at the Department

3.1. New Faculty Members



Dr. Yasir Mehmood

Dr. Yasir Mehmood joined the Department of Computer Science in Fall 2016 as Assistant Professor (Tenure Track). He received his PhD from Pompeu Fabra University Barcelona, Spain in 2016 and completed his MS CS & Engineering with distinction from Aalto University Helsinki, Finland. Dr. Mehmood has experience in Spain as a researcher where most of his work comprised of the Industrial Research with Yahoo Labs. He proposed novel modeling frameworks using techniques from machine learning and data mining, and published his work in the premier CS venues.



Dr. Humaira Kamal

Dr. Humaira Kamal joined the Department of Computer Science in Fall 2016 as Assistant Professor (Tenure Track). She received her PhD in Computer Science from the University of British Columbia (UBC) in 2013. Her research interests include Fine Grain MPI, parallel computing, multicore systems and network protocols. She was the recipient of several awards during her PhD studies including the Four Year Doctoral Fellowship, University Graduate Fellowship and the Cisco URP grant. She was a Cordula and Paetzold Fellow at UBC during her MS. studies. Since graduation she has been working as a Post-doctoral Research Fellow at UBC sponsored by Intel Corporation. Dr. Kamal has previously worked as an Instructor in the department of Computer Science at the Lahore University of Management Sciences (LUMS) and taught several courses. Prior to joining LUMS she has also served as a design engineer at Descon and Nespak.

3.2. New Staff Members

Ms. Hira Nadeem

Ms. Hira Nadeem joined the Department of Computer Science in October 2016 as Research Assistant.

Ms. Noor-e-Sehar

Ms. Noor-e-Sehar joined the Department of Computer Science in January 2017 as Assistant Manager.

3.3. Mid-Year Review and Promotions

Dr. Mian M. Awais was promoted to Professor in 2016.

4. New Courses

During the year, 38 courses were taught at the Department of Computer Science including 4 new courses.

New Courses Taught in 2016		
	Course Code	Course Title
1.	CS 516	Mathematical Cryptography
2.	CS 677	Internet of Things
3.	CS 225	Fundamentals of Computer Systems
4.	CS 363	E-Government

5. Departmental Distinctions During 2016

- Dr. Haris Aziz, an alumnus of the Department of Computer Science has made a break through by solving a major problem in Computer Science/Mathematics. Dr. Aziz and his co-author Simon Mackenzie who both work at Data 61, CSIRO and UNSW Australia, have proposed a general bounded and envy free cake cutting protocol for any number of people. The result has improved their previous result where they designed an envy free algorithm for four people.
- Dr. Murtaza Taj, Assistant Professor at the Department of Computer Science along with Dr. Sohaib Ahmed Khan, Dr. Nadhra Shahbaz Naeem Khan successfully completed their USAID and LUMS Faculty Initiative Fund-FIF sponsored project called "Digital preservation of Pakistan heritage." One of the aims of this project was to promote virtual tourism which in turn promotes the actual tourism and portrays a softer image of Pakistan.
- A research proposal by Dr. Hamid Abdul Basit and Dr. Basit Shafiq, Computer Science faculty has been accepted for funding by ICT R&D Fund. Their proposal titled "Design and Implementation of a Language Independent Software Clone Management Tool Suite for Single and Multiple Systems" has been awarded PKR 19,664,111.
- Dr. Muhammad Hamid Alizai, Assistant Professor at the Department of Computer Science has won a Higher Education Commission (HEC) grant of PKR 5,207,031. This award will allow Dr.

Alizai to work on his research entitled “Extending the Cyber physical Systems R&D Paradigm using Energy Transference.”

- Using a dataset of 0.5 million subscribers from one of the largest cellular operators in Pakistan, researchers at LUMS, UC Berkeley, and Duke University recently presented the first in-depth analysis of cell phone features (e.g., CPU speeds, cellular interface, and level of security) at ACM IMC 2016, the premier conference on Internet measurements and analysis. The conference was held in Santa Monica, California in November 2016. The research team comprised of Dr. Ihsan Ayyub Qazi, Assistant Professor, Sohaib Ahmad and Abdul Lateef Haamid, CS undergraduates at LUMS.
- LUMS graduate, Muneeb Ali, BSc Computer Science 2003 was featured at a TEDx New York talk to share his journey of setting up his company, Blockstack, which he co-founded with his friend Ryan Shea.
- Dr. Ihsan Ayyub Qazi, Assistant Professor, Department of Computer Science, LUMS along with his students Syed M. Irteza and Ghufran Baig have devised a new system called PASE. The group also included Ali Munir and Dr. Alex Liu from Michigan State University and Dr. Fahad R. Dogar from Tufts University. Using PASE, the group has shown that the proposed system out performs the state-of-the-art systems without requiring any changes in datacenter switches or middle boxes. A research paper describing PASE has been accepted to appear in IEEE/ACM Transactions on Network, a premier journal on data networking. An earlier part of the project appeared in ACM SIGCOMM, the most prestigious research conference on computer networks.
- Aqsa Kashaf, a Computer Science major batch of 2016, won the prestigious Grace Hopper Scholarship. As part of this scholarship, she has received a financial award as well as an invitation for an all-expense paid trip to attend the 2016 Grace Hopper Celebration of Women in Computing (GHC) in Houston, Texas, from October 19-21, 2016.

6. Faculty Research Publications

Faculty at the Department of Computer Science is rigorously involved in research and publications in top notch journals and conferences as can be seen in the table below:

Publication at the Department of Computer Science 2016			
	Journal	Conference	Workshop
Total	14	24	5
Gold /A* / A Ranked	4	11	2
Silver / B Ranked	2	3	
International Co-Authorship	7	7	

* For publication details please refer to Annexure I (10.2, 10.3 and 10.4)

7. Research Grants

7.1. Peer Reviewed Internal Grants

Year	Faculty Travel Grant-FTG (PKR)	Startup Grant-STG (PKR)	Faculty Initiative Grant-FIF (PKR)	Total Internal Grants (PKR)
Approved Budget (2016)	4,079,730	4,000,000	5,890,000	13,969,730
Total Count Of Grants Approved 2016	10	2	6	18

7.2. Peer Reviewed External Grants

Year	HEC Grant (PKR)	Faculty Workshop (PKR)	Consultancy Project (PKR)	Unrestricted Research Grants (PKR)	Sponsored Research Grants (PKR)	Total External Grants (PKR)
Approved budget (2016)	780,330	326,975	1,362,019	21,482,292	47,244,030	71,195,646
Total count of grants approved (2016)	3	2	1	4	5	15

**For faculty grants details please refer to Annexure II*

8. Student Placements

Convocation 2016 Summary	
Major	Total
BS Computer Science	68
MS Computer Science	26

Placement 2016 Summary					
Major	Employed	Higher Studies	Inaccessible	Looking for a job	Total
BS Computer Science	38	27	2	1	68
MS Computer Science	17	5	0	4	26

9. Events and Talks Arranged at the Department of Computer Science

9.1. Talks at the Department of Computer Science in 2016

Month	Title	Speaker
January	Cross-Media Semantic Context for Language and Vision Applications	Ms. Amara Tariq, University of Central Florida
March	Modeling the Roles of Individuals and Groups in the Dynamics of Information Propagation	Yasir Mehmood, Graduate Researcher, Eurecat, Barcelona
April	Research in IoT and Sensornets: Blue-sky and Practical	Dr. Affan A. Syed, Director Engineering, Islamabad office of PLUMgrid
April	Sampling Strategies for Efficient BRDF and SVBRDF Acquisition and Modeling	Muhammad Asad Ali, Founder / CTO (startup), GRAVISC Inc. (www.gravisc.com) Rawalpindi, Pakistan
April	Manhattan Scene Understanding for Vision & Robotics	Dr. Wajahat Hussain, University of Zaragoza, Spain
April	Coordinating Software Development through Conflict Detection and Avoidance	Dr. Bakhtiar A. Kasi, University of Nebraska – Lincoln, U.S.A.
April	Image-based Classification of Roman Republican Coins	Dr. Hafeez Anwar, Vienna University of Technology, Vienna, Austria
September	Building Reliable and Low Latency Networks	Mr. Jó Ágila Bitsch, RA at RWTH Aachen University, Germany
September	Mining Large-Scale Internet Data to Find Stealthy Abuse	Mobin Javed, PhD student in Computer Science at U.C. Berkeley
December	Tracing Information Flows Between Ad Exchanges Using Retargeted Ads	Ahmad Bashir, a PhD student at Northeastern University, US
December	Networking Stack Abstractions for High-performance Flow-processing Middle boxes	Asim Jamshed, PhD student in the Electrical Engineering department at Korea Advanced Institute of Science and Technology (KAIST)

9.2. Events at the Department of Computer Science

Month	Title	Speaker / Presenter/ Organizer
March	TPI PeaceTech Exchange	Theme of the conference: Enabling and Promoting Technologies for Peacebuilding, an Initiative by PeaceTech lab
August	Startup Weekend	Anyone was welcome to pitch their startup idea and receive feedback from their peers.
September	IT Graduate Trainee Engineer Programme	Fatima Group conducted its recruitment drive at LUMS targeting Computer Sciences and Electrical Engineering graduates of 2016/
September	'Google for Publishers'	Officials from Google Singapore talked about development through online content generation.

10. Annexure I:

10.1. Academic Faculty at the Department of Computer Science

	Name	Designation	Research Interests
1.	Dr. Arif Zaman	Professor	Pseudo-random Number Generation, Big Data, Theoretical Computer Science and Cryptography.
2.	Dr. Asim Karim	Professor	Data Mining, Machine Learning and Applied Artificial Intelligence.
3.	Dr. Mian Muhammad Awais	Professor	Artificial Intelligence, Inverse Modeling, Data Management, Fuzzy Logic and Soft Computing.
4.	Dr. Shafay Shamail	Associate Professor	Software Engineering, Information Technology, E-Government and Simulation of Large Systems.
5.	Dr. Basit Shafiq	Associate Professor	Information Security and Privacy, Cloud Computing and Distributed Systems.
6.	Dr. Zartash Afzal Uzmi	Associate Professor (Joint with the Department of Electrical Engineering)	Restoration Routing and Traffic Engineering, Routing Protocols, Algorithms for Reliability in High Speed Communication Networks, and Optimizations in sensor and ad-hoc networks.
7.	Dr. Naveed Arshad	Associate Professor and Chair	Smart Grids, Software Engineering, Self-managing Systems and Educational Technologies.
8.	Dr. Hamid Abdul Basit	Assistant Professor	Software Engineering, Software Reuse, Software Maintenance, Recommendation Systems and Clone Management.
9.	Dr. M. Fareed Zaffar	Assistant Professor	Network and Distributed Systems Security. Statistical methods for large datasets, and enabling public sector reform through technology.
10.	Dr. Ihsan Ayyub Qazi	Assistant Professor	Cloud Computing and Data Centers, Wireless Networks and Internet Censorship and ICT for developing regions.
11.	Dr. Murtaza Taj	Assistant Professor	Computer Vision, Image Processing and Computer Graphics.
12.	Dr. Junaid Haroon Siddiqui	Assistant Professor	Program Analytics, Software Engineering, And Software Verification.
13.	Dr. Imdad Ullah Khan	Assistant Professor	Discrete Mathematics, Algorithms, Theoretical Computer Science, and Algorithms for massive datasets.
14.	Dr. Suleman Shahid	Assistant Professor	Human Computer Interaction, Social and

			Cultural Computing, ICT4D and Social Innovation and Digital Humanities.
15.	Dr. Muhammad Hamad Alizai	Assistant Professor	Internet of Things and Imbedded Networks.
16.	Dr. Yasir Mehmood	Assistant Professor	Machine learning, Social network Analysis, and Data Mining
17.	Dr. Humaira Kamal	Assistant Professor	High performance computing, Large-scale Concurrent Systems and Multicore Systems.
18.	Mr. Kamran Nishat	Teaching Fellow	Computer Networks, Data Centre Networks.
19.	Mr. Syed M. Irteza	Teaching Fellow	Systems and Networks, Data Centre Networking and Distributed Computing.
20	Mr. Aadil Zia Khan	Teaching Fellow	Computer Networks and Wireless Networks.

10.2. Conference Publications

	Description	Author	Local/International	Title	Date	Rating
1.	Online Hangman Game App with Feedback Boosted Decision Stumps	Mian M Awais	International	IEEE 4th International Conference on Brain-Computer Interface 2016, Yongpyong Resort, Korea, Feb. 22-24, 2016	February 2016	
2.	Simulating Intermittently Powered Embedded Networks	M Hamad Alizai, Qasim Raza, Yasra Chandio, Affan A. Syed, Tariq M. Jadoon	International	The International Conference on Embedded Wireless Systems and Networks (EWSN2016), Graz, Austria, February 14-17, 2016	February 2016	A
3.	Verification of MPI Java programs using Software Model Checking **	Waqas ur Rehman, M Sohaib Ayub and Junaid H. Siddiqui	International	Principles and Practice of Parallel Programming PPOP2016, Barcelona, Spain March 12-15, 2016	March 2016	A
4.	Sneak-Peek: High Speed Covert Channels in Data Center Networks	Rashid Tahir, Mohammad Taha, Xun Gong, Adnan Ahmed, Amiremad Ghassami, Hasanat Kazmi, Matthew Caesar, M Fareed	International	IEEE-INFOCOM2016, San Francisco, USA, April 10-15, 2016	April 2016	A*

		Zaffar and Negar Kiyavash				
5.	Effective Partial Order Reduction in Model Checking Database Applications	Maryam A Ghafoor, M Suleman Mahmood and Junaid H Siddiqui	International	IEEE International Conference on Software Testing Verification and Validation, 6(ICST 2016), April 10-15, 2016, Chicago, IL, USA	April 2016	C
6.	Mehfooz Aurat: Transforming Smart Phone in to Women Safety Devices against Harassment	Suleman Shahid	International	International Conference on Information & Communication Technologies and Development, (ICTD16) June 03 – 06, 2016, Ann Arbor, Michigan, USA	June 2016	C
7.	Improving Security Awareness in the Government Sector	M Fareed Zaffar	International	17th International Conference on Digital Government Research Dg.O2016, Shanghai, China, June 8 - 10, 2016	June 2016	B
8..	Malware Slums: Measurement and Analysis of Malware on Traffic Exchanges	M Fareed Zaffar	International	The 46th Annual IEEE/IFIP International Conference on Dependable Systems and Networks 2016, June 28 - July 1, 2016, Toulouse, France	June-July 2016	A
9.	3D Architectural Modeling: Coarse-to-fine Model Fitting on Point Cloud	Murtaza Taj	International	33rd Annual Conference - Computer Graphic International 2016 (CGI2016)	June-July 2016	B

10.	Maximizing Renewable Energy Efficiency Using AI Techniques	Qasim Khalid and Naveed Arshad	International	Sustainability in Energy and Buildings, 2016, (SEB-16), Sept.11 - 13, 2016 Turin, Italy	September 2016	A
11.	Symbolic Execution of Stored Procedures in Database Management Systems	M Suleman Mahmood, Maryam A Ghafoor, and Junaid H Siddiqui	International	31st IEEE/ACM International Conference on Automated Software Engineering (ASE 2016), Sept. 3-7, 2016, Singapore	September 2016	A
12.	User Defined Inverter Charging to Alleviate Load on Stressed Electrical Grids	Ali Ahmad, Junaid Subhani and Naveed Arshad	International	IEEE-International Conference on Smart Grid Communications – Smart Grid Comm2016, Nov. 06-09, 2016, Sydney, Australia	November 2016	A
13.	A View from the Other Side: Understanding Mobile Phone Characteristics in the Developing World	Sohaib Ahmad, A Lateef Haamid, Zhenyu Zhou, Zafar A Qazi, Theophilus Benson and Ihsan A Qazi	International	ACM Internet Measurement Conference (IMC 2016), Nov. 12-16, 2016, Santa Monica, USA	November 2016	A
14.	Incremental Check pointing for Interruptible Computations: Poster Abstract**	Saad Ahmed, Hassan Khan, Junaid Haroon Siddiqui, Jó Ágila Bitsch, Muhammad Hamad Aliza	International	Proceedings of the 14th ACM Conference on Embedded Network Sensor Systems CD-ROM	November 2016	A*
15.	Retrieving Design Pattern Usage Examples using Domain Matching.	Shamsa Abid, Zohaa Qamar, Natasha Khan and Hamid A. Basit	International	23rd Asia-Pacific Software Engineering Conference (APSEC2016), Dec. 06-09, 2016, Hamilton, New Zealand	December 2016	B
16.	SlickFi: A Service Differential Scheme for High-Speed WLANs	Ihsan Ayyub Qazi	International	The 12th International Conference on Emerging Networking Experiments and Technologies (CoNext'16)	December 2016	A*

				Dec. 12-16, 2016		
17.	Who Should Receive the Vaccine?	Imdad Ullah Khan	International	The 14th Australasian Data Mining Conference, Dec. 06-08, 2016, Canberra, Australia (AusDM2016)	December 2016	
18.	Children's Lying Behaviour in Interactions with Personified Robots	Mariana Serras Pereira, Yoeri Nijs, Suleman Shahid, Marc Swerts	International	BCS HCI 2016 (UK)	2016	A
19.	Supporting Pakistani Farmers Through Digital Means: An Exploratory Study	Syed Ali, Harris Durrani, Muhammad Naeem, Waleed Riaz, Suleman Shahid	International	CHI 2016 (San Jose, USA)	2016	
20.	Interactive Advertisements in an IoT Era	Vassilis-Javed Khan, Dion Bonné, Suleman Shahid	International	INTETAIN 2016 (Utrecht, the Netherlands)	2016	
21.	Baby+: a mobile application to support pregnant women in Pakistan	Umaira Uzma Sajjad, Suleman Shahid	International	MobileHCI 2016 (Florence, Italy)	2016	
22.	Skeuomorphic, flat or material design: requirements for designing mobile planning applications for students with autism spectrum disorder	Suleman Shahid, Jip ter Voort, Maarten Somers, Inti Mansour	International	MobileHCI 2016 (Florence, Italy)	2016	
23.	Children's Facial Expressions in Truthful and Deceptive Interactions with a Virtual Agent	Mariana Serras Pereira, Jolanda de Lange, Suleman Shahid, Marc Swerts	International	HAI 2016 (Singapore)	2016	
24.	MehfoozAurat: Transforming Smart Phones into Women Safety Devices Against Harassment	Muhammad Yasir Sarosh, Muhammad Abdullah Yousaf, Mair Muteeb Javed, Suleman Shahid	International	ICTD 2016 (Michigan, USA)	2016	

***Poster*

10.3. Journal Publications

	Description	Author	Title	Date	Ranking
1.	Energy harvesting and wireless transfer in sensor network applications: Concepts and experiences	Naveed Anwar Bhatti, Muhammad Hamad Alizai, Affan A Syed, Luca Mottola	ACM Transactions on Sensor Networks (TOSN)	2016	Bronze
2.	InKeV: In-Kernel Distributed Network Virtualization for DCN	Zaafar Ahmed, Muhammad Hamad Alizai, Affan A Syed	ACM SigComm Computer Communication Review (CCR)	2016	Silver
3.	Protocols and Mechanisms to Recover Failed Packets in Wireless Networks: History and Evolution	Sheraz Khan, Muhammad Moosa, Farhan Naeem, Muhammad Alizai, Jong-Myon Kim	IEEE Access	2016	
4.	PASE: Synthesizing Existing Transport Strategies for Near-Optimal Data Center Transport	Ali Munir, Ghufraan Baig, Syed Mohammad Irteza, Ihsan Ayyub Qazi, Alex X Liu, Fahad Rafique Dogar	IEEE/ACM Transactions on Networking	2016	Gold
5.	Low-Carb: A practical scheme for improving energy efficiency in cellular networks	Muhammad Saqib Ilyas, Ihsan Ayyub Qazi, Bilal Rassool, Zartash Afzal Uzmi	Computer communications	2016	Bronze
6.	An approach to operate high-powered legacy electrical appliances on small scale solar PV systems	Zaid Bin Tariq, Qasim Khalid, Jahangir Ikram, Naveed Arshad	Renewable Energy	2017	Gold
7.	An analysis of the effects of residential uninterpretable power supply systems on Pakistan's power sector	Naveed Arshad, Usman Ali	Energy for Sustainable Development	2017	Honorable
8.	Practical and self-configurable multi hop wireless infrastructure: a functional perspective	Hammad Alizai	International Journal of Ad Hoc and Ubiquitous Computing (IJAHUC)	2017	
9.	Terms-based discriminative information space for robust text classification	Khurum Nazir Junejo, Asim Karim, Malik Tahir Hassan, Moongu Jeon	Information Sciences	2016	Gold

10.	NELasso: Group-Sparse Modeling for Characterizing Relations among Named Entities in News Articles	Amara Tariq, Asim Karim, Hassan Foroosh	IEEE Transactions on Pattern Analysis and Machine Intelligence	2016	Gold
11.	African American Race is an Independent Risk Factor in Survival from Initially Diagnosed Localized Breast Cancer	Robert Wieder, Basit Shafiq, Nabil Adam	Journal of Cancer	2016	Honorable
12.	On fuzzy repetitions detection in documentation reuse	DV Luciv, DV Koznov, HA Basit, AN Terekhov	Programming and Computer Software	2016	Un ranked
13.	Perfect matchings in 4-uniform hypergraphs	Imdad Ullah Khan	Journal of Combinatorial Theory, Series B	2016	Silver
14.	Comparing a Perceptual and an Automated Vision-Based Method for Lie Detection in Younger Children	Serras Pereira Mariana, Cozijn Reinier, Postma Eric, Shahid Suleman, Swerts Marc	Frontiers in Psychology (Human Media Interaction)	2016	Bronze

10.4. Workshop Publications

	Description	Author	Local/ International	Title	Date	Rating
1.	Towards a Structural Clone Based Recommender System	Shamsa Abid and Hamid A Basit	International	10th International Workshop on Software-Clones (IWSC2016) (Co-located with 23rd IEEE International SANER2016), Osaka, Japan March 13-18, 2016	2016	
2.	Supporting Pakistani Farmers Through Digital Means: An Exploratory Study	Syed Ali, Haris Durrani, M Naeem, Waleed Riaz, and Suleman Shahid	International	CHI 2016 Workshop, Autism and Technology, May 7 – 12 at San Jose, CA, USA	2016	A

3.	Towards a Redundancy Aware Network Stack	Ali Musa Ifikhar, Fahad Rafique Dogar, Ihsan Ayyub Qazi	International	ACM HotNets, Atlanta, USA, November 2016 (acceptance rate: 27.8%)	2016	A
4.	ICT intervention for Agricultural Development: Exploring Prospects for Pakistani Farmers	Syed Ali, Harris Durrani, Muhammad Naeem, Waleed Riaz, Suleman Shahid:	International	International Workshop of Computing in Development (CHI 2016), San Jose, USA	2016	
5.	Designing Digital Aids for Children with Autism in Pakistan: Challenges and Possibilities	Jehan Khattak, Maha Munawar, Umaira Sajjad and Suleman Shahid	International	International Workshop of Computing in Development (CHI 2016), San Jose, USA	2016	

11. Annexure: II

11.1. Peer-Reviewed Internal Grant

11.1.1. Faculty Travel Grant-FTG

	Principle Investigator-PI	Fiscal Year	Year Of Approval	Approved Funds (PKR)	Total FTG Amount 2016 (PKR)
1	Suleman Shahid	2015-2016	2016	365,000	4,079,730
2	Junaid Haroon Siddiqui	2015-2016	2016	410,000	
3	Ihsan Ayyub Qazi	2016-2017	2016	436,800	
4	Naveed Arshad	2016-2017	2016	364,480	
5	Murtaza Taj	2016-2017	2016	398,100	
6	Hamid Abdul Basit	2016-2017	2016	408,100	
7	Muhammad Hamad Alizai	2016-2017	2016	441,000	
8	Ihsan Ayyub Qazi	2016-2017	2016	456,250	
9	Mian Muhammad Awais	2016-2017	2016	396,600	
10	Imdad Ullah Khan	2016-2017	2016	403,400	

11.1.2. Start-up Grant-STG

	Principle Investigator-PI	Fiscal Year	Completed/Active	Amount (PKR)	Total STG Amount (PKR)
1	Suleman Shahid	2016-2017	In Execution	2,500,000	4,000,000
2	Yasir Mehmood	2016-2017	In Execution	1,500,000	

11.1.3. Faculty Initiative Fund-FIF

	Principle Investigator-PI	Co- PI	Fiscal Year Approval	Year of Approval	Approved Funds (PKR)	Total FIF Amount (PKR)
1	Muhammad Hamad Alizai	Tariq Mahmood Jadoon	2015-2016	2016	1,000,000	5,890,000
2	Asim Karim		2015-2016	2016	930,000	
3	Suleman Shahid		2015-2016	2016	1,000,000	
4	Naveed Arshad		2015-2016	2016	1,000,000	
5	Ihsan Ayyub Qazi	Zartash Afzal Uzmi	2015-2016	2016	960,000	
6	Hamid Abdul Basit		2015-2016	2016	1,000,000	

11.2. Peer-Reviewed External Grant

11.2.1. HEC Travel Grant

	Principle Investigator-PI	Fiscal Year Approval	Year of Approval	Approved Funds (PKR)	Total Amount (PKR)
1	Muhammad Hamad Alizai	2015-2016	2016	223,550	780,330
2	Junaid Haroon Siddiqui	2015-2016	2016	295,500	
3	Junaid Haroon Siddiqui	2016-2017	2016	261,280	

11.2.2 . Consultancy Projects

Principle Investigator-PI	Donor Agency	Fiscal Year	Total Grants In 2016	Approved Funds (PKR)
Arif Zaman	K Legal Solicitors	2015-2016	1	1,362,019

11.2.3. Unrestricted Grants

	Principle Investigator -PI	Co- PI	Donor Agency/Primary Sponsor	Fiscal Year Approval	Year Of Approval	Approved Funds (PKR)	Total G Amount (PKR)
1	Suleman Shahid		PeaceTech Lab	2015-2016	2016	11,141,252	21,482,292
2	Muhammad Fareed Zaffar	Tariq Mahmood Jadoon and Suleman Shahid	United States Institute of Peace (USIP)	2015-2016	2016	7,858,630	
3	Muhammad Fareed Zaffar	Suleman Shahid	Center for Economic Research in Pakistan (CERP)	2015-2016	2016	1,885,410	
4	Shafay Shamail		Oracle Corporation	2015-2016	2016	597,000	

11.2.4. Faculty Workshops

	Principle Investigator-PI	Donor Agency	Fiscal Year Approval	Year of Approval	Approved Funds (PKR)	Total FWC Amount (PKR)
1	Asim Karim	Sight savers Pakistan	2015-2016	2016	261,000	326,975
2	Shafay Shamail	HEC	2015-2016	2016	65,975	

11.2.5. Sponsored Research Grants-SRG

	Principle Investigator-PI	Co-PI 1	Co-PI 2	Donor Agency	Fiscal Year Approval	Year Of Approval	Approved Funds (PKR)	Total SRG amount (PKR)
1	Dr. Hamid Abdul Basit	Shafay Shamail	Basit Shafiq	ICT R&D Fund*	2015-2016	2016	17,099,617	47,244,030
2	Dr. Basit Shafiq	Naveed Arshad	Shafay Shamail	ICT R&D Fund	2015-2016	2016	12,764,045	
3	Dr. Murtaza Taj	Sohaib Ahmad Khan		ICT R&D Fund	2015-2016	2016	9,193,137	
4	Dr. Muhammad	Dr. Syed Affan Ahmed	-	HEC	2015-2016	2016	5,207,031	

	Hamad Alizai	Director Engineering, PLUMgrid Inc.						
5	Dr. Imran Mahmood - National University of Science and Technology (NUST)	Naveed Arshad		USAID**	2015-2016	2016	2,980,200	

*External Collaboration: Softech systems

**External Collaboration: Power Information Technology Company (PITC)

For further details, please visit <https://sbasse.lums.edu.pk/department/computer-science>

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