CURRICULUM VITAE

Personal Information:

Name: DR. SHAFIQ HUSSAIN

Address: Associate Professor and Chairman
                         Department of Computer Science
                         University of Sahiwal,
                         Sahiwal, Pakistan.

Telephone No: +92 322 7075700, 3348072222
E-mail: drshafiq@uosahiwal.edu.pk
                         shafiq.hussain57@gmail.com

Date of Birth: December, 08, 1974
Place of Birth: Sahiwal, Punjab, Pakistan.
Nationality: Pakistan.

Education:

2009 to Jan 2014   PhD Software Engineering, University of Sunderland
                         UK

1998 to 2000   M.Sc Computer Science, Bahauddin Zakariya
                         University, Multan
                         C.G.P.A 3.04/4.00
                         (Bachelor Honors Degree of 16 years Education)

1994 to 1996   B.Sc Mathematics, Physics, Bahauddin Zakariya
                         University, Multan
                         81% marks
                         (Bachelor Degree 14 years Education)

1991 to 1993   F.Sc Mathematics, Physics, Chem. Board of
                         Intermediate and Secondary Education, Multan
                         67% marks
                         (Intermediate Degree 12 years Education)

1989 to 1991   Matric Mathematics, Physics, Chem. Board of
                         Intermediate and Secondary Education, Multan
                         77% marks
                         (Matriculation Degree 10 years Education)

Research Topic in PhD:

Formal Development Methodology for Secure Web Applications (FDMSWAP)

Research Interests:

Software Modeling using Formal Methods, Modeling Secure Software Systems, Formal verification and validation of software systems, Lightweight Application of Formal methods in system design, modeling using Event-B and RODIN tools: Atelier-B provers, ProB and AnimB, System Development using Z Notation and Z/EVES Prover.

Research Papers:

1. Hussain, S., Harry E., and Dunne P. 2011. "Threat Modeling Using Formal Methods: A New Approach to Develop Secure Web Applications." In *Emerging Technologies (ICET), 2011 7th International Conference on*, 1–5. IEEE.

2. Rasool, G. and Hussain, S. 2012. "CREAT: Customizable Reverse Engineering Abstraction Technique." *World Applied Sciences Journal* 19 (10): 1453–61.

3. Hussain, S., Dunne, P. and Rasool, G. 2013. Formal Specification of Security Properties using Z Notation. Research Journal of Applied Sciences, Engineering and Technology, 5(19): 4664-4670.

4. Hussain, S., Rasool, R., Atef, M. and Shahid. A. 2013. "FDMSWAP: Formal Development Methodology for Secure Web Applications." *Journal of Basic and Applied Scientific Research* 3 (3): 1123–1128.

5. Hussain, S., Rasool, R., Atef, M. and Shahid. A. 2013. "A Review of Approaches to Model Security into Software Systems." *Journal of Basic and Applied Scientific Research* 3(4): 642–647.

6. Rasool, Ghulam, Shabib Aftab, Shafiq Hussain, and Detlef Streitferdt. 2013. "eXRUP: A Hybrid Software Development Model for Small to Medium Scale Projects." *Journal of Software Engineering and Applications* 06 (09): 446–457. doi:10.4236/jsea.2013.69055.

7. Muhammad Perbat Baloch, Salman Qadri, Shafiq Hussain, Shabir Ahmad, Abu Buker Siddique, Farooq Azam. Comparative Study of Risk Management in Centralized and Distributed Software Development Environment. Sci.Int.(Lahore),26(4),1523-1528,2014.

8. Shafiq Hussain, Asif Kamal, Shabir Ahmad, Ghulam Rasool, Sajid Iqbal. Threat Modelling Methodologies: A Survey. Sci.Int.(Lahore),26(4),1607-1609,2014

9. Abu Buker Siddique, Salman Qadri, Shafiq Hussain, Shabir Ahmad, Imran Maqbool, Abdul Karim Nawaz Khan. Integration of Requirement Engineering with UML in Software Engineering Practices. Sci.Int.(Lahore),26(5),2157-2162,2014.

10. Ghulam Rasool, Maria Khan, Shafiq Hussain. A SYSTEMATIC LITERATURE REVIEW ON MOBILE GAMES DESIGN PATTERNS. Sci.Int.(Lahore), 27(2),1365-1372, 2015

11. Tahir, H. M., Shouket, A., Hussain, S., Nadeem, M., Raza, Z., & Zafar, N. A. (2015, December). Formalization of security properties using VDM-SL. In *Information and Communication Technologies (ICICT), 2015 International Conference on* (pp. 1-6). IEEE.

12. Shafiq Hussain, Muhammad Rehan Faheem. Separation of Veins and Arteries for estimating Hypertensive Retinopathy in Fundus Images. Biomedical Research and Therapy, 3(6), pp. 673-678, 2016.

13. Fozia Saeed, Shafiq hussain, Zeeshan Ul Haq, Rakhshan Sultan. "Interactive Case Recognition using Forensic Techniques" *International Journal of Computer Science and Information Security (2017):* 123-126

14. Jabbar, Abdul, Sajid Iqbal, Muhammad Usman Ghani Khan, and Shafiq Hussain. "A survey on Urdu and Urdu like language stemmers and stemming techniques." *Artificial Intelligence Review* 49, no. 3 (2018): 339-373. (Impact Factor 5.095)

15. Hussain, S., Farid, S., Alam, M., Iqbal, S. and Ahmad, S., 2018. Modeling of Access Control System in Event-B. *The Nucleus*, *55*(2), pp.74-84.

16. Jabbar, Abdul, Saif ul Islam, Shafiq Hussain, Adnan Akhunzada, and Manzoor Ilahi. "A comparative review of Urdu stemmers: Approaches and challenges." Computer Science Review 34 (2019): 100195. (Impact Factor 1.50)

17. Akhtar, Nadeem, and Shafiq Hussain. "Formal modeling of a mail transport system based on multi-agent system-of-systems." *Journal of Information Communication Technologies and Robotic Applications* (2019): 68-79.

18. Jabbar, Abdul, Sajid Iqbal, Manzoor Ilahi Tamimy, Shafiq Hussain, and Adnan Akhunzada. "Empirical evaluation and study of text stemming algorithms." Artificial Intelligence Review (2020): 1-30. (Impact Factor 5.095)

19. Hussain, Shafiq, Umar Draz, Sana Yasin, Aisha Anum, Zunaim Ahmad, Haroon Mahmood, Zaid Bin Faheem, and Shahid Sani. "Improving Scrum Model Using Inclusion Information Security Practices through Information Security Master and Backlog Framework," *International Journal of Computer Science and Network Security* (2020), 20(6): 99-111.

20. Bashir, Tayba, Khurshid Asghar, Mubbashar Saddique, Shafiq Hussain, and Inam Ul. "Enhancement of Fundus Images for Diagnosing Diabetic Retinopathy Using B-Spline." *International Journal of Advanced Computer Science and Applications* (2020), 11(6): 233-239.

21. Ahmad, Shabir, Shafiq Hussain, Mahmood Ahmad Butt, Zanab Safdar, Haroon Mahmood, Zaid Bin Faheem, and Umar Draz. "Novel Algorithm for Throughput Enhancement in Wireless Networks using Multichannel," *International Journal of Computer Science and Network Security* (2020), 20(8): 203-214.

22. Nasim, Sana, Shafiq Hussain, Umar Draz, Fozia Saeed, Zeeshan Ul Haq, Tahira, Umber Noreen Abbas, Mahboob Ur Rehman, and Ahsan Ali. 2020. "An Energy Efficient Base Stations Optimization Scheme for Mobile Wireless Sensor Networks Enabled IoTs." *International Journal of Computer Science and Network Security* 20 (10): 65–78.

23. Safdar, Zanab, Ruqia Safdar Bajwa, Shafiq Hussain, Haslinda Binti Abdullah, Kalsoom Safdar, and Umar Draz. 2020. "The Role of Roman Urdu in Multilingual Information Retrieval: A Regional Study." *The Journal of Academic Librarianship* 46 (6): 102258.

24. Qaisar, Z.H., Irfan, M., Ali, T., Ahmad, A., Ali, G., Glowacz, A., Glowacz, W., Caesarendra, W., Mashraqi, A.M., Draz, U. and Hussain, S., 2020. Effective beamforming technique amid optimal value for wireless communication. *Electronics*, *9*(11), p.1869.

25. Khalid, Muhammad Junaid, Muhammad Irfan, Tariq Ali, Muqaddas Gull, Umar Draz, Adam Glowacz, Maciej Sulowicz, Arkadiusz Dziechciarz, Fahad Salem AlKahtani, and Shafiq Hussain. 2020. "Integration of Discrete Wavelet Transform, DBSCAN, and Classifiers for Efficient Content Based Image Retrieval." *Electronics* 9 (11): 1886.

26. Uzma Arif, M. Nawaz, Shafia Rana, Imran Haider Qureshi, Yasser Elmasry, and Shafiq Hussain. 2020. "Influence of Chemical Reaction on Mass Transport in Yield Stress Exhibiting Flow Regime." *Theoretical Foundations of Chemical Engineering* 54 (6): 1327–39.

27. Ayesha, Hareem, Sajid Iqbal, Mehreen Tariq, Muhammad Abrar, Muhammad Sanaullah, Ishaq Abbas, Amjad Rehman, Muhammad Farooq Khan Niazi, and Shafiq Hussain. 2021. "Automatic Medical Image Interpretation: State of the Art and Future Directions." *Pattern Recognition* 114 (June): 107856.

28. Muhammad Irfan, Muhammad Aksam Iftikhar, Sana Yasin, Umar Draz4, Tariq Ali, Shafiq Hussain, Sarah Bukhari, Abdullah Saeed Alwadie, Saifur Rahman, Adam Glowacz and Faisal Althobiani. 2021. "Role of Hybrid Deep Neural Networks (HDNNs), Computed Tomography and Chest X-rays for the Detection of COVID-19." *International Journal of Environmental Research and Public Health,* 18: 3056.

Employment:

Currently I am working as Associate Professor and Chairman, Department of Computer Science, University of Sahiwal, Project Director (HEC Development Project) University of Sahiwal and Director IT University of Sahiwal.

Previously I have worked as Campus Director, University of Sahiwal, Sahiwal, Project Director, HEC Development Project BZU Sub-Campus Sahiwal, Campus Incharge, Directorate of Distance Education (DDE) BZU Sub-Campus Sahiwal and Assistant Professor Computer Science University of Sahiwal, Teacher Incharge Department of Computer Science University of Sahiwal.

Distinction and Awards:

Got Overseas Full Time Scholarship for PhD studies in the UK.

Prepared first PC-1 of amount Rs.1366.937 Million of University of Sahiwal and got it approved from all relevant bodies of Govt. of Pakistan.

Administrative Experience:

05-10-2018 to Date	Chairman, Department of Computer Science University of Sahiwal
05-10-2018 to Date	Project Director, HEC Development Project titled "Development of University of Sahiwal"
05-10-2018 to Date	Director IT, University of Sahiwal
30-06-2013 to Date	Project Director, HEC Development Project BZU Sub-Campus Sahiwal where I completed Academic Block-2 building, Overhead Water Reservoir, 10 Nos Residences, Girls Hostel, Metal Road and brick soling. I purchased and developed 2 No of Computer Labs, Physics Lab, Chemistry Lab and Psychology Lab. My other achievements include: purchase of 630 KVA WAPDA standard transformer, installation and operation of internal electricity and development of feasibility report for independent electric feeder for BZU Sub-Campus Sahiwal (University of Sahiwal).
07-11-2016 to 08-03-2018	Campus Director for one and half year. In this capacity, I developed the barren land of the university. My major achievements being Campus Director are: development of irrigation systems of university land including water hydrant, thousands of feet of water channels, plantation of many hundred trees, landscaping of university lands, development of thousands of fee security path ways

	along boundary wall, development of many grassy lawns and development of thousands of fee pathways for students.
21-01-2016 to 30-06-2018	Campus Incharge, Directorate of Distance Education (DDE) BZU Sub-Campus Sahiwal where I eliminated corrupt mafia and made the system transparent, neat and clean.
30-09-2014 to Date	Head, Department of Computer Science BZU Sub-Campus Sahiwal where I started the Department of Computer Science from scratch and started BS Computer Science Program (Morning and Evening), MCS Program (Morning and Evening) and MSCS program (Evening). All these programs are running successfully with 100% (approx.) admissions every year.
28-10-2002 to 07-06-2005	Director Students Affairs, Center for Undergraduate Studies, Bahauddin Zakariya University, Multan
10-03-2003 to 28-03-2005	Assistant Superintendent Ali Hall (Hostel), Bahauddin Zakariya University, Multan
28-03-2005 to 05-05-2006	Superintendent Ali Hall (Hostel), Bahauddin Zakariya University, Multan
07-06-2005 to 17-10-2007	Incharge Examinations, Center for Undergraduate Studies, Bahauddin Zakariya University, Multan

Teaching Experience:

23-03-2009 to 21-02-2013	PhD Studies at the University of Sunderland UK.
22-03-2013 to Date	Head, Department of Computer Science BZU Sub-Campus Sahiwal.
02-06-2015 to Date	Assistant Professor, Department of Computer Science, BZU Sub-Campus Sahiwal.
07-06-2004 to 22-03-2009	Lecturer in Computer Science in the Center for Undergraduate Studies, Bahauddin Zakariya University, Multan

28-10-2002 to 06-06-2004	Lecturer (Contract) in Computer Science in the Center for Undergraduate Studies, Bahauddin Zakariya University, Multan
25-06-2001 to 28-10-2002	Visiting Lecturer in Computer Science, in the Department of Statistics, Department of Commerce, Department of Civil Engineering and Department of English at Bahauddin Zakariya University, Multan.

References:

Dr. Chris Bowerman
Reader,
Department of Computing, Engineering and Technology, University of Sunderland UK.
Email: chris.bowerman@sunderland.ac.uk
Cell # +44 191 5153629 , +44 709 2213947
Skype chrisbowermanwork

Dr. Peter Dunne,
Senior Lecturer,
Department of Computing, Engineering and Technology,
Faculty of Engineering and Advanced Manufacturing,
School of Engineering,
University of Sunderland UK.
Email: peter.dunne@sunderland.ac.uk