



2nd ANNUAL INTERNATIONAL ONLINE WORKSHOP on Software Engineering (WSE-2022)



Theme: "**Cybersecurity CULTURE**"

7th June, 2022,

**Software Engineering Research Group (SERG-UOM),
CS & IT, University of Malakand, Pakistan**



Organized by: Software Engineering Research Group (SERG-UOM),
CS & IT, University of Malakand, Dir Lower, Pakistan

SNo	Presenter's Name	Affiliation
1	Prof. Dr. Rashid Ahmad, (Chief Guest of the event)	Vice Chancellor, University of Malakand, Pakistan (General Chair of the Workshop)
2	Prof. Dr. Jamil Ahmad	Dean and Chairman, Department of CS&IT, University of Malakand, (General Co-Chair of the Workshop)
3	Dr. Siffat Ullah Khan (PhD, Keele, UK)	Lead Organizer/Focal Person of the Workshop, Associate Professor Department of CS&IT, University of Malakand, Pakistan.
4	Mr. Tariq Malik	Ex Chief Technology officer, Pakistan Army (Guest Speaker- I)
5	Prof. Dr. Mahmood Niazi	Professor of Software Engineering, KFUPM, Kingdom of Saudi Arabia (Guest Speaker – II)
6	Dr. Ryad	Heriot Watt University, UAE (Guest Speaker – III)
7	Dr. Arif Ali Khan	University of Oulu, Finland (Guest Speaker- IV)
8	Dr. Keshav Kaushik	UPES, India (Guest Speaker- V)
9	Prof. Dr Naveed Ikram	Associate Dean in the faculty of Computing, Riphah International, University, Islamabad (Guest Speaker - VI)
10	Dr. Naeem Janjua	Associate Professor Department of Creative Technologies, Air University, Islamabad. (Guest Speaker- VII)
11	Dr Muhammad Hanif	Assistant Professor Riphah Riphah International University. (Guest Speaker – VIII)
12	Ms. Sonia Rafaqat	Lecturer , University of Haripur. (Guest Speaker – IX)
13	Dr Rafiq Ahmad Khan	PhD Alumni, UOM
MPhil/PhD Scholars (University of Malakand (UOM), Kohat University of Science and Technology (KUST), University of Science and Technology, Bannu (USTB), Shaheed Benazir Bhutto University (SBBU) Dir Upper.		
01	Ms. Naheed Akhtar	MPhil Scholar, KUST
02	Ms. Anum Imtiaz	MSCS Scholar KUST
03	Ms. Sania Malik	MS-SE, KUST
04	Mr. Asif Iqbal	MPhil Scholar, UOM
05	Mr. Naeem Ullah	PhD Scholar, UOM
06	Mr. Masaud Salam	MPhil Scholar, UOM
07	Mr. Asif Ullah	MPhil Scholar, UOM

08	Mr. Muhammad Saqib Shahzad	MSCS Scholar, KUST
09	Mr. Ikram Ullah Khan	MPhil Scholar ,UOM
10	Mr. Saad Ullah Khan	MSCS Scholar, UST-Bannu
11	Mr. Nisar Ullah	PhD scholar, UOM
12	Mr. Zia Ullah	MPhil Scholar, UOM
13	Mr. Ghulam Murtaza Khan	Lecturer, SBBU, Dir Upper, PhD Scholar, UOM

General Chair of the Workshop

Prof. Dr. Rashid Ahmad

VICE CHANCELLOR, University of Malakand



I cordially welcome you all to the 2nd Annual International Workshop on Software Engineering having a theme “Cybersecurity Culture”. It is an honor to lead positive change and to contribute to the sacred cause of education. I have a vision and a dream for University of Malakand to rank among the top universities worldwide. The vision can be materialized through commitment, hard work and respect. Equally important is to provide a congenial atmosphere for character-building, inculcating the spirit of inquiry and critical thinking among students.

To promote research culture at University of Malakand events like Conferences, Workshops, Seminars etc. play a vital role for knowledge sharing and collaboration with national and international research community. The current research workshop, WSE-2022, is one of such efforts being made to materialize our zeal towards establishing creative environment at University of Malakand. I hope that this International research workshop will provide an opportunity to both national and international researchers in this domain in general and the researchers at University of Malakand in particular to expose their capabilities and curiosity for research.

I appreciate all the organizers of this research workshop and particularly, Dr Siffat Ullah Khan for his tireless efforts who always remained a role model for young researchers at the Department of Computer Science and IT, University of Malakand.

General Co-Chair of the Workshop

Prof. Dr. Jamil Ahmad

DEAN and Chairman Department of CS&IT,
University of Malakand, PhD (France)



It is an honor to lead the Department of Computer Science and IT as the Dean and Chairman since 2018. I have a vision and a dream for the Department to be recognized as a great seat of learning at national and international level.

My goal is to achieve academic excellence in terms of providing quality education and opportunities for quality research. The workshop WSE-2022 is the second Annual international workshop at University of Malakand and this will be followed by similar kind of research collaboration and dissemination activities to promote research culture at the university.

I encourage my faculty members to participate in and contribute to strengthen academics, eradicate academic corruption, and promote research culture and ~~curriculum~~ attainment standards. I fully support this research workshop and appreciate all organizers of this research workshop and particularly, Dr Siffat Ullah Khan for his tireless efforts who always remained a role model for young researchers at the Department of Computer Science and IT, University of Malakand. I hope that this virtual workshop on software engineering with a theme on Cybersecurity Culture (WSE-2022) will be a source of sharing research ideas and tacit knowledge, a great success and interesting for everyone.

I am grateful to the top management of University of Malakand, the Guest Speakers, Organizers, and all participants who worked for its success.

Lead Organizer / Focal Person

Dr. Siffat Ullah Khan

Associate Professor
Department of CS&IT, University of Malakand,
(PhD, Keele University, UK)



I warmly welcome you all to the 2nd Annual International Workshop on Software Engineering having a theme “Cybersecurity Culture”. We had organized, till 2020, four workshops on software engineering, but last year the 5th one of this workshop series was conducted online as due to the Covid-19 pandemic we had changed the mode of this workshop as virtual/online and due to this reason it was the first online research workshop at University of Malakand in 2021. Last year, due to switching to online mode, we got a very good number of participants from various countries and due to this reason we maintained this online series in the current year, WSE-2022. This workshop, WSE-2022, will be a type of hybrid workshop that will be hosted physically at the Digital Library, University of Malakand for local researchers whereas at the same time it will be online for non-locals and foreigners. We have worked as a team to make this virtual workshop, a source of sharing research ideas and tacit knowledge, a great success and interesting for everyone.

My accomplishment to the Software Engineering community across the globe in general and University of Malakand in particular, are summarized as follow:

I am working at University of Malakand as a pioneer teacher since December, 1st 2001. I did my PhD from Keele University UK. Till date, I have successfully supervised 5 PhD and 17 MPhil scholars whereas currently supervising 11 MS/PhD research scholars. I have published 100+ research publications having more than 2000 citations and h-index: 20 available at Google scholar. I have received various national and international research awards including Gold Medal (M.N.Azam prize in Software) from Pakistan Academy of Sciences in 2015.

We will provide a central platform for knowledge dissemination and sharing research experiences in the area of Software Engineering in general and Cybersecurity in particular. We have invited a renowned Professor of Software Engineering, Dr Mahmood Niazi, who has a vast experience of both academia and industry and have worked in technologically advanced countries such as UK, Australia, Malaysia etc. We have also invited renowned professors, experts and consultants as guest speakers from various countries such as UAE, Finland etc. to share their experiences and tacit knowledge.

It is an honor as well as opportunity for our research community to take benefits from the expertise of this internationally reputed professor in Software Engineering community across the globe.

I am greatly indebted to all our Guest Speakers in general and particularly Prof. Dr. Mahmood Niazi, KFUPM Saudi Arabia, for his kind support to WSE-2022 for the promotion of research culture at University of Malakand. I am also grateful to the local speakers from different universities in Pakistan for their support to make this event a memorable event to develop and promote research culture at University of Malakand.

I am really grateful to the honorable Vice-chancellor University of Malakand Prof. Dr. Rashid Ahmad and Dean of IT Prof. Dr. Jamil Ahmad for their motivation and support for materializing this event. I am also grateful to Mr. Shahid Khan Director ORIC and all members/staff of the Office of Research Innovation and Commercialization (ORIC) at UOM, the Registrar at UOM Mr. Hayat Ullah Yousafzai, Web administrator, and all management and academic staff.

I am also thankful to all of my colleagues at the Department of CS&IT in general and members of the Software Engineering Research Group (SERG) in particular. The whole team of this workshop (WSE-2022) is fully committed to make this event an awesome experience for everybody.

Co-Organizing Committee of WSE-2022

We, as Co-Organizers of the WSE-2022 are looking forward to see you virtually during the upcoming research workshop. We hope that the participants of the workshop will get great benefits from the talks to be delivered by both International and national speakers. We are committed to make this workshop a memorable event for all.

Dr. Muhammad Ilyas

Assistant Professor
Department of CS&IT, University of Malakand
PhD in Computer Science (Software Engineering)



Dr. Nasir Rashid

Assistant Professor
Department of CS&IT, University of Malakand
PhD in Computer Science (Software Engineering)



Dr. Muhammad Salam Muslim

Assistant Professor
Department of CS&IT, University of Malakand PhD in
Computer Science (Software Engineering)



Dr. Aftab Alam

Assistant Professor
Department of CS&IT, University of Malakand PhD in
Computer Science



Co-Organizers/Students Committees of WSE-2022

We, as Co-Organizer (Students Committee) of the WSE-2022 are looking forward to see you virtually during the upcoming research workshop. We hope that the participants of the workshop will get great benefits from talks to be delivered by both International and national speakers. We are committed to make this workshop a memorable event for all.

Mr. Nisar Ahmad Khan, PhD Scholar, CSIT, UOM (Convener)

Mr. Rafiq Ahamad Khan, PhD Scholar, CSIT, UOM (Member)

Mr. Ghulam Murtaza Khan, PhD Scholar, CSIT, UOM (Member)

Mr. Naeem Ullah, PhD Scholar, CSIT, UOM (Member)

Engr Shaukat Ali, PhD Scholar, CSIT, UOM (Member)

Mr. Naseer Ullah, PhD Scholar, CSIT, UOM (Member)

Ms. Shabnam Bibi, PhD Scholar, CSIT, UOM (Member)

Ms. Nabila Bibi, PhD Scholar, CSIT, UOM (Member)

Ms. Uzma Bibi, MPhil Scholar, CSIT, UOM (Member)

Mr. Asif Iqbal, MPhil Scholar, CSIT, UOM (Member)

Mr. Asif Ullah, MPhil Scholar, CSIT, UOM (Member)

Mr. Zia Ullah, MPhil Scholar, CSIT, UOM (Member)

Mr. Ikram Ullah, MPhil Scholar, CSIT, UOM (Member)

Mr. Zubair, MPhil Scholar, CSIT, UOM (Member)

Guest Speaker -I

Mr. Tariq Malik



Mr. Tariq Malik is known for involvement in articulation of various national level projects and establishment of imperative National IT assets. His personal vision is to: “To contribute towards resolution of pressing issues of society.” He has the singular honour of operating as Chief Technology Officer, Pakistan Army. He is member of national think tanks and part of the Government e-commerce group think tank. He was an Independent Director of Askari Bank management board. Before joining Pakistan Army, he was the lead technical architect of the Dubai Internet City, Dubai e-Government and ARAMCO ERP projects. He also consulted NBD, NBAD, DIB, Riyadh Bank, Habib Bank AG Zurich and various others. Represented Global Enterprise Security Services Group that led MENA (Middle East, North Africa and Pakistan) Cyber Security Practice. He has been honored to deliver lectures in accredited national institutions like National Defense University (NDU), National School of Public Policy Lahore (NSPP), and National University of Science and Technology (NUST). Currently he is providing consultancy services to International and local organizations on security of their critical infrastructure requiring utmost secrecy and security

Guest Speaker -II

Prof.Dr.Mahmood Niazi

Professor of Software Engineering
King Fahd University of Petroleum and Minerals Saudi Arabia



Dr Mahmood Niazi is a Professor of Software Engineering at the Informat

Science Department, King Fahd University of Petroleum and Minerals Saudi Arabia. Dr Niazi has spent more than a decade with leading technology firms and universities as a process analyst, senior systems analyst, project manager, lecturer and professor. He has participated in and managed several software developments projects. These have included the development of management information systems, software process improvement initiatives design and implementation, and several business applications projects.

Dr Niazi has great interests in empirically exploring and designing innovative processes in order to improve software development processes in organisations. He is interested in developing sustainable processes in order to develop systems which are reliable, secure and fulfils customer needs. A sustainable process is the process which is adaptable, easy to use and learn, supported by the technology, empirically sound and is benchmarked on existing software quality standards and models. His research interests are: evidence-based software engineering, software security engineering, requirements engineering, sustainable, reliable and secure software engineering processes, global system development and management, and software process improvement.

Guest Speaker -III

Dr. A. Ryad Soobhany

Assistant Professor | Associate Director of Academic Quality |
MSc Project Coordinator, School of Mathematical & Computational
Sciences, Heriot-Watt University Dubai



He received his PhD degree in Computer Science and Multimedia Forensics from Keele University, UK. He was a Digital Forensics and Security Researcher at Forensics Pathways Ltd, UK and a Marie Curie Fellow at Warwick University, UK before joining Leeds Beckett University, UK as a Postdoctoral Research Fellow and part-time Lecturer. He was also Lecturer in the School of Computing and Mathematics at Keele University

He is currently an assistant professor and assoc. director of academic quality in the School of Computing and Mathematics at Heriot-Watt University in Dubai, UAE. He is the co-chair of the International Conference on Information Technology and Application (ICITA) conference. His research interests include digital forensics, multimedia security, computer vision, machine learning, data visualization & analytics, mixed methods.



Guest Speaker -IV

Dr. Arif Ali Khan

Assistant Professor, University of Oulu, Finland

Arif Ali Khan works as an Assistant Professor with the M3S Unit, Empirical Software Engineering in Software, Systems and Services, University of Oulu, Finland. Previously he worked as a faculty member with the Faculty of Information Technology, University of Jyväskylä, Finland; College of Computer Science and Technology, Nanjing University of Aeronautics and Astronautics, China; and Department of Computer Science, COMSATS University, Islamabad, Pakistan. He received a BS degree in software engineering from the University of Science and Technology, Bannu, Pakistan and an MSc degree in information technology from Universiti Teknologi PETRONAS, Malaysia. He obtained a PhD degree in software engineering from the Department of Computer Science, City University of Hong Kong. He has participated in and managed several empirical software engineering-related research projects. Khan has expertise in software process improvement, global software development, multi-criteria decision analysis, DevOps, quantum software architecture, microservices architecture, AI ethics, agile software development, requirements change management, soft computing, and evidence-based software engineering. He is professionally active in conducting publication-based research workshops, serving as guest editor in main track software engineering journals, and editing software engineering research books. He has published over 80 articles in peer-reviewed software engineering conferences and journals.



Guest Speaker -V

Dr. Keshav Kaushik, UPES, India

Assistant Professor in the School of Computer Science
University of Petroleum and Energy Studies, Dehradun, India.

Mr. Keshav Kaushik is working as an Assistant Professor in the School of Computer Science at the University of Petroleum and Energy Studies, Dehradun, India. He is an experienced educator with over 7 years of teaching and research experience in Cybersecurity, Digital Forensics, the Internet of Things, and Blockchain Technology. Mr. Kaushik received his B.Tech degree in Computer Science and Engineering from the University Institute of Engineering and Technology, Maharshi Dayanand University, Rohtak. In addition, M.Tech degree in Information Technology from YMCA University of Science and Technology, Faridabad, Haryana. He served as a fellow faculty intern at the Indian Institute of Technology (IIT) Ropar. He has published 35+ research papers in International Journals and has presented at reputed International Conferences. He has published more than 5 Indian patents and was granted one Australian patent. He is a Certified Ethical Hacker (CEH) v11, CQI and IRCA Certified ISO/IEC 27001:2013 Lead Auditor and Quick Heal Academy certified Cyber Security Professional (QCSP). He acted as a keynote speaker and delivered 50+ professional talks on various national and international platforms. He has edited more than 8 books with reputed international publishers. He has chaired various special sessions at international conferences and served as a reviewer in peer-reviewed journals and conferences.

Guest Speaker -VI

Prof.Dr.Naveed Ikram

Associate Dean in the faculty of computing
Riphah International, University, Islamabad



Cyber security is a major concern as human are increasing “living” in the cyberspace. The human factors need to be considered while solving the cyber security problems. It is known that culture plays its role in shaping the human behavior. People who belong to different cultures behave differently to similar situations. How culture influences the cyber security behavior is an interesting aspect to investigate. I will be talking about on the issue of cultural influence on the cyber security behavior.

Professor Naveed Ikram is Associate Dean in the faculty of computing at Riphah International University, Islamabad. He holds a PhD in Computer Science, from the University of Salford, UK and has more than 30 years of experience in academia and industry. He also leading the empirical software engineering research group within the faculty with has linkage with School of Information Technology, Deakin University, Australia, and Blekinge Institute of Technology (BTH), Sweden. He is am Senior Member of IEEE, USA and ACM, USA.

Guest Speaker -VII

Dr.Naeem Khalid Janjua

Associate Professor | Department of Creative Technologies,
Air University, Islamabad



Dr Naeem Khalid Janjua has over 13 years of teaching and research experience in the software engineering discipline. His research interests are software architecture modelling, autonomous generation of knowledge graphs, decision support systems and NLP. He has published 39 research publications, including 1 authored book, 1 book chapter, 15 journal papers published in HEC recognized journals, and 23 refereed conference papers with an H-Index of 13 (Google Scholar). Among his achievements, he has over 560 citations and has obtained 15 competitive research grants. He is currently serving as an Associate Professor at the Department of Creative Technologies, Air University, Islamabad, Pakistan.

Guest Speaker -VIII

Dr. Muhammad Hanif

Assistant Professor Riphah Institute of Informatics,
Riphah International University, Malakand Campus



Dr. MUHAMMAD HANIF received the B.S. degree in information technology from the University of Malakand, Pakistan, and the M.S. degree in information technology from SEECS, NUST, Islamabad, Pakistan, and Ph.D. degree in computer science with NCBA&E Lahore, Pakistan. He is currently working as an Assistant Professor with the Riphah Institute of Informatics, at Riphah International University Malakand Campus. He is having more than 10 Years of Academics and Industry experience and was with various academic institutions, like Bahria University Lahore Campus and University of Sargodha Lahore Campus and has supervised numerous bachelor's and master's students. He has 10 Impact Factor publications and his current research interests in images cryptography, information security, cyber security, networking, cloud computing, and the Internet of Things.

Guest Speaker -IX

Ms. Sonia Razaqat

Lecturer University of Haripur

Sonia Razaqat belongs to Haripur, she has done her graduation in Software Engineering from Fatima Jinnah Women University Rawalpindi and MS from COMSATS Islamabad. After her MS she joined the University of Haripur in 2018 as a lecturer and also took admission in Ph.D. in 2019 at the said university. She has completed her course work and done with her comprehensive and now working on her research under the umbrella of Secure Software Development. She has also earned multiple certifications in cyber security during her time at UOH. Besides this, she has worked as a speaker and trainer, started her journey as a trainer in schools, and provided multiple trainings on the use of Information Technology in the process of teaching and learning in different schools in Haripur. In 2018 she was also invited to Government Girls Degree College No. 02 Haripur as a resource person for a seminar on Career Counseling. In 2021 as a university employee started a series of workshops on freelancing, e-commerce, and cybersecurity. First organized a workshop on freelancing and e-commerce in the Public Health and Nutrition Department of UOH. Then extended this to the affiliated colleges of the University of Haripur. She also organized a workshop in March 2022 at the University of Haripur on Skillset Development. Pursuing her passion for student development and training, she founded “Let’s Grow Together” in 2021. Let’s Grow Together provides training and guides students in skill set development.

MPhil/PhD Students' presentations at WSE-2022

Dr Rafiq Ahmad Khan

PhD student/Alumni, University of Malakand

Title: Security Assurance Model of Software Development for GSD Vendors

Supervisor:

Dr. Siffat Ullah Khan

Associate professor department of computer science & IT University of Malakand.

Ms. Naheed Akhtar

Qualification: M.phil(computer science)

University name: Kohat university of science and technology

Title: "Analysis of students' performance indicator in a virtual learning environment by leveraging machine learning"

Supervisor: Dr Irfan-uddin

Ms. Sania Malik

MS-SE KUST university of Kohat

Topic: Ontology driven service-oriented requirement engineering

Supervisors: Dr Abdul Shahid and Dr. Roman

Ms. Anum Imtiaz

M.phil scholar in computer science

University: Kohat University of Science and Technology

Title of presentation: Empirical Evaluation of Pre-trained Object Detection Model for Autonomous Vehicle.

Supervisor 1: Dr. Abdul shahid

Supervisor 2: Dr. Muhammad Roman

Mr. Ikram ullah Khan

M.Phil scholar, computer science (software Engineering)

University of Malakand

Title of presentation: Protocol for Developing Cybersecurity Organizational Culture: Challenges and Solutions

Name of supervisor: Dr Siffat Ullah Khan

Associate professor department of computer science & IT University of Malakand.

Mr. Ziaullah

M.Phil scholar

University: University of Malakand

Title: SLR Protocol for Trust building indicators among individuals in Cybersecurity organizational culture.

Research supervisor: Dr.Siffat Ullah Khan, Associate prof University of Malakand

Mr. Naeem Ullah

Qualification: PhD Computer Science is in progress

University Name: University of Malakand

Title of presentation: Multivocal Literature Review Protocol for the Identification of Cybersecurity Challenges and its Solutions in the Context of Vehicle-to-Vehicle Communications from Software Engineering Perspective.

Research supervisor: Dr. Siffat Ullah Khan

Mr. Saad Ullah Khan

MS-CS University of Science and technology, Bannu.

Supervisor name: Dr Abdul Wahid Khan

Topic: Using DevOps in GSD: A SLR protocol

Mr. Muhammad Saqib Shahzad

MSCS scholar (KUST)

University: Kohat University of Science & Technology, Kohat

Title: "Evaluating the impact of COVID-19 on online learning by using machine learning and deep learning techniques"

Supervisors:

Dr. Muhammad Irfan Uddin and Dr. Muhammad Adnan

Institute of Computing, KUST, Kohat

Mr. Asif Iqbal

Qualification: M.Phil

University: University of Malakand

Title: Secure Database Development: A Systemic Mapping Study & Industrial Survey

Supervisor: Dr. Siffat Ullah Khan

Mr. Asif Ullah

MPhil Scholar, University of Malakand

Title of presentation:

Developing industry university linkage for offshore software development outsourcing vendors SLR protocol

Name of research supervisor: Dr SIFFAT ULLAH KHAN.

Mr. Masaud Salam

Qualifications MPhil Scholar

University of Malakand

Topic Quantum Computing Challenges and practices in Software Industry

Supervisor Name Dr. Muhammad Ilyas

Mr. Ghulam Murtaza Khan

PhD Scholar/Lecturer SBBU, Dir Upper

University: University of Malakand

Title: Global Software Development/Software Outsourcing

Supervisor: Dr. Siffat Ullah Khan and Dr Muhammad Ilyas, CSIT, UOM

Mr. Arif Ihsan

Enrolled in MS (18 years education)

University Name: Kohat University of science and technology

Presentation title: Optimization of CNN using Hunger Games search for image classification

Research supervisor: Dr. Saima Hassan

Who should attend/Beneficiaries?

All Faculty members and Research students at the Department of CS & IT, University of Malakand, National and International Researchers working in the areas of Cybersecurity and Software Engineering.

VOOV Link for the online Workshop will be shared with all registered participants on email/WhatsApp

Registration:

The Application, Link and timing will be shared soon, through email and WhatsApp group

Please Register through the following link:

<https://forms.gle/qHeH7q18EnuGr2mx5>

For Queries Please Contact:

1. Dr. Siffat Ullah Khan, Lead Organizer WSE-2022, Email: siffatullah@uom.edu.pk

Mobile/Whatsapp: 00923459346744

2. Mr. Nisar Muhammad Khan, PhD Scholar (Software Engineering), UOM:

Mobile/Cell: 03469739794