

Satwat Bashir

✉ satwat_bashir@hotmail.com

in Satwat

🌐 <https://satwatbashir.com/>

Education

- 2022 – 2025
Expected
- 📌 **Ph.D. Computer Science** London South Bank University, UK.
Thesis title: *A robust Federated Learning approach for heterogeneous data in multi-tier edge environments.*
Summary: My research develops a federated learning framework optimized for 6G infrastructure, addressing challenges like data and device heterogeneity. By introducing an additional layer between edge and federated nodes, my model enables a two-level aggregation process, enhancing data handling and making federated AI adaptable for complex, distributed networks.
- 2017 – 2018
- 📌 **M.Sc. Cognition and Computation**, Birkbeck College, London, UK.
Thesis title: *Strategy Discovery: A Perspective from a Number Game.*
- 2008 – 2010
- 📌 **M.Sc. Computer Science**, University of Engineering and Technology (UET), Lahore, Pakistan.
Thesis title: *Storage, Retrieval, and Manipulation Techniques of Brain Data.*
- 2003 – 2007
- 📌 **B.Sc. Computer Engineering**, University of Engineering and Technology (UET), Lahore, Pakistan.


Skills

- Research Areas and Expertise: 📌 Computer Networks, Federated Learning, Machine Learning, Edge Computing, 5G, Software Engineering.
- Networking Simulation Tools 📌 GNS3, NetSim, Packet Tracer.
- Cloud Computing Platforms 📌 OpenStack, Kubernetes, OpenShift, Docker.
- Machine Learning Frameworks 📌 TensorFlow, PyTorch, Keras, Flower, Scikit-learn, Jupyter Notebook.
- Development Tools 📌 Visual Studio, PyCharm, Google Colab, Postman.

Employment

- 2023 – Present
- 📌 **Hourly Paid Lecturer**, Dept. of Computer Science and Informatics, London South Bank University, UK
- Tutored modules:**
Future of Internet Technologies (Level 7):
IP addressing, vNET, OpenStack, DevStack, Keystone, Neutron
Responsibilities included developing lab materials, facilitating discussions, marking, drop-in sessions and enhancing student engagement.
Machine Learning (Level 7)
Linear regression, Logistic regression, Neural networks, CNN, RNN
Responsibilities included, making the code run, explain the implementation of concepts, marking the coursework.
Object-Oriented Programming (Level 5),
Software Engineering (Level 5)

Employment (continued)

2013 – 2015  **Lecturer**, Dept. of Information Systems, University of Management and Technology, Lahore, Pakistan

Taught and lead modules:

B.Sc. Level Courses – *Management of Information Systems, Business Analytics, and Project Management.*

M.Sc. Level Courses – *Introduction to Data Sciences using Python, Machine Learning, and Natural Language Processing.*

Responsibilities included:

Preparation – Developed comprehensive lesson plans, created course materials, and designed assignments.

Teaching – Delivered engaging lectures and conducted interactive workshops to enhance student learning.

Administration – Managed course records, coordinated schedules, and ensured smooth course operations.

Assessment and Marking – Designed assessment criteria, graded assignments and exams, and provided constructive feedback.

Examining and Evaluation – Conducted end-of-term exams, supervised project evaluations, and assessed student performance.


2016 – 2017  **Research Scholar** Dept. of Psychology, Stanford University, USA.


2016  **Python Developer (Part-Time)**. ConverSpeech LLC, USA


2012 – 2015  **Software Engineer**. Department of Hydraulics, NESPAK, Pakistan.

Professional Development and Recognitions

Trainings

2024  **Mobile Radio Propagation for 5G and Beyond**
Awarded by ESoA course and COST INTERACT Training School, Technische Universität Braunschweig, Germany.

2022  **Outcomes-Based Education Quality Assurance Perspective**
Training conducted by the Accreditation and Academic Quality Improvement Cell (AAQIC), University of Management and Technology (UMT), Lahore.

2020  **Art & Science of Teaching and Learning in Higher Education**
Certification program completed at the University of Management and Technology (UMT), Lahore.

Training Conducted

2021  **Machine Learning with Neural Networks**
Conducted a one-day training session organized by CETA, University of Management and Technology (UMT), Lahore.

Awards

2022  **Employee of the Quarter**
Awarded University of Management and Technology (UMT), Lahore.

Professional Development and Recognitions (continued)

- 1 **WOMANi Academica of the Year 2022:**
Recognized as one of the "Most Influential Women in Islamic Business & Finance" and included in the WOMANi list by Cambridge IFA.

Research Publications

Conference Proceedings

- 1 S. Bashir, T. Dagiuklas, K. Kassai, and M. Iqbal, "Architectural blueprint for heterogeneity-resilient federated learning," in *IET 6G and Future Networks Conference (IET 6G 2024)*, vol. 2024, 2024, pp. 62–68. [DOI: 10.1049/icp.2024.2236](https://doi.org/10.1049/icp.2024.2236).
- 2 K. Kassai, T. Dagiuklas, S. Bashir, and M. Iqbal, "Greenbytes: Intelligent energy estimation for edge-cloud," in *IET 6G and Future Networks Conference (IET 6G 2024)*, vol. 2024, 2024, pp. 57–61. [DOI: 10.1049/icp.2024.2237](https://doi.org/10.1049/icp.2024.2237).

Journal/ Magazine Articles

- 1 S. Bashir, T. Dagiuklas, K. Kassai, and M. Iqbal, "Federated learning for energy efficiency in 6g," *Wireless World Research and Trends*, 2024, Magazine, In production. [DOI: 10.13052/2794-7254.001](https://doi.org/10.13052/2794-7254.001).
- 2 M. Ashraf, F. Abid, M. Atif, and S. Bashir, "The role of cnn and rnn in the classification of audio music genres," *VFAST Transactions on Software Engineering*, vol. 10, no. 2, pp. 149–154, 2022.
- 3 M. Sharma, S. Bashir, and G. Suri, "Three addend addition: Who goes out of order and why?" *Journal of Numerical Cognition*, vol. 7, no. 1, pp. 66–81, 2021.
- 4 M. U. G. Khan, S. Bashir, A. Nasir, A. A. Shah, and S. Mehmood, "Towards computational model of human brain memory," *Journal of Mathematics (ISSN 1016-2526)*, vol. 46, no. 2, pp. 35–45, 2014.