Curriculum Vitae

Muhammad Muneeb

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Websites: Researchgate, Google Scholar, Github
(61) 492 814 028
Date of birth: 14 August 1997
Languages: English, Urdu, Punjabi
Hobbies: 3D Animation creation, Football, Poetry writing, Programming

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Education

1-April-2023—present
Degree: Doctorate of Philosophy in Chemistry and Molecular Biology **(Computational Biology)**
Where: University of Queensland, Brisbane, Australia
GPA: Research-based

25-August-2019—31-May2021
Degree: Master of Science in Computer Science
Where: Khalifa University, Abu Dhabi, UAE
GPA: 3.87 of 4.0
Concentration in Artificial Intelligence

10-October-2015—24-June-2019
Degree: Bachelor of Science in Computer and Information Sciences
Where: PIEAS, Islamabad, Pakistan
GPA: 3.92 of 4.0

Employment

01-June-2022—31-March-2023
Position: Research Associate (10 months contract - Temporary - Full time)
Where: Department of Electrical Engineering and Computer Science, Khalifa University (Dr. Damini Ernesto)
Tasks: Most of the work involved programming and debugging code. We pre-processed the radar and satellite data. I also develop a machine learning methodology for identifying whether the existence of a cloud will result in rain or not. The final task was results generation by mutating various parameters. I also wrote and edited the manuscript.

01-June-2021—01-May-2022
Position: Research Associate (12 months contract - Temporary - Full time)
Where: Department of Mathematics, Khalifa University (Dr. Samuel F. Feng)
Tasks: I worked on various genetic problems, like comparing machine learning with an existing genotype-phenotype association and prediction model. I also develop a tool for genetic files formats conversion. I wrote and edited the manuscripts. I also prepared the conference presentation and presented the paper content.

25-August-2019—
Position: Teaching Assistant (21 months contract - Temporary - Full time)

31-May-2021 ifa University

Where: Department of Electrical Engineering And Computer Science, Khal-

Course: Object Oriented Programming
Tasks: I conducted lab sessions and quizzes, graded lab sessions and quizzes, and prepared and delivered Revision sessions before students' exams.

Current research work

01-June-2022— 31-December-2022

Project: Cloud seeding enhancement
Where: Khalifa University, Abu Dhabi, UAE
Advisor: Dr. Ernesto Damiani
Contributions:

- **Project summary:** This research presents a machine learning-based methodology and framework for finding the atmospheric parameters to determine whether the cloud will result in rain or not, ultimately assisting in finding parameters to boost the performance of cloud seeding.

Publications

- Ahsan Baidar Bakht et al. "DeepBLS: Deep Feature-Based Broad Learning System for Tissue Phenotyping in Colorectal Cancer WSIs". In: *Journal of Digital Imaging* (Apr. 2023). DOI: 10.1007/s10278-023-00797-x. URL: https://doi.org/10.1007/s10278-023-00797-x
- Noman Yousaf et al. "PCGA: Polynomial collocation genetic algorithm for singular Poisson-Boltzmann equation arising in thermal explosions". In: *Heliyon* 9.4 (Apr. 2023), e15076. DOI: 10.1016/j.heliyon.2023.e15076. URL: https://doi.org/10.1016/j.heliyon.2023.e15076
- Zeeshan Raza, Irfan Ul Haq, and Muhammad Muneeb. "Agri-4-All: A Framework for Blockchain Based Agricultural Food Supply Chains in the Era of Fourth Industrial Revolution". In: *IEEE Access* 11 (2023), pp. 29851–29867. DOI: 10.1109/access.2023.3259962. URL: https://doi.org/10.1109/access.2023.3259962
- Maryam Qamar et al. "Saliency Prediction in Uncategorized Videos Based on Audio-Visual Correlation". In: *IEEE Access* 11 (2023), pp. 15460–15470. DOI: 10.1109/access.2023.3244191. URL: https://doi.org/10.1109/access.2023.3244191
- Noureen Zafar et al. "Traffic Prediction in Smart Cities Based on Hybrid Feature Space". In: *IEEE Access* 10 (2022), pp. 134333–134348. DOI: 10.1109/ACCESS.2022.3231448
- Jawad-ur-Rehman Chughtai, Irfan Ul Haq, and Muhammad Muneeb. "An attention-based recurrent learning model for short-term travel time prediction". In: *PLOS ONE* 17.12 (Dec. 2022). Ed. by Xiyu Liu, e0278064. DOI: 10.1371/journal.pone.0278064. URL: https://doi.org/10.1371/journal.pone.0278064
- Muhammad Muneeb, Samuel Feng, and Andreas Henschel. "Transfer learning for genotype–phenotype prediction using deep learning models". In: *BMC Bioinformatics* 23.1 (Nov. 2022). DOI: 10.1186/s12859-022-05036-8. URL: https://doi.org/10.1186/s12859-022-05036-8

- Muhammad Muneeb. "LSTM input timestep optimization using simulated annealing for wind power predictions". In: *PLOS ONE* 17.10 (Oct. 2022). Ed. by Seyedali Mirjalili, e0275649. DOI: 10.1371/journal.pone.0275649. URL: https://doi.org/10.1371/journal.pone.0275649
- Jawad-Ur-Rehman Chughtai et al. "Travel Time Prediction Using Hybridized Deep Feature Space and Machine Learning Based Heterogeneous Ensemble". In: *IEEE Access* 10 (2022), pp. 98127–98139. DOI: 10.1109/ACCESS.2022.3206384
- Muhammad Muneeb, Samuel F. Feng, and Andreas Henschel. "Deep Learning Pipeline for Image Classification on Mobile Phones". In: *Artificial Intelligence and Applications*. Academy and Industry Research Collaboration Center (AIRCC), May 2022. DOI: 10.5121/csit.2022.120901. URL: https://doi.org/10.5121/csit.2022.120901
- Muhammad Muneeb, Samuel F. Feng, and Andreas Henschel. "Heritability, genetic variation, and the number of risk SNPs effect on deep learning and polygenic risk scores AUC". in: *2022 14th International Conference on Bioinformatics and Biomedical Technology*. ACM, May 2022. DOI: 10.1145/3543377.3543387. URL: https://doi.org/10.1145/3543377.3543387
- Muhammad Muneeb, Samuel F. Feng, and Andreas Henschel. "Tutorial on 8 Genotype Files Conversion". In: *2022 10th International Conference on Bioinformatics and Computational Biology (ICBCB)*. IEEE, May 2022. DOI: 10.1109/icbcb55259.2022.9802470. URL: https://doi.org/10.1109/icbcb55259.2022.9802470
- Muhammad Muneeb. "Method to integrate speaker identification, speech recognition, and information retrieval algorithms for speaker-based information retrieval". In: *International Journal of Knowledge Engineering and Data Mining* 7.3/4 (2022), p. 234. DOI: 10.1504/ijkedm.2022.126069. URL: https://doi.org/10.1504/ijkedm.2022.126069
- Muhammad Muneeb, Samuel F. Feng, and Andreas Henschel. "Can We Convert Genotype Sequences Into Images for Cases/Controls Classification?" In: *Frontiers in Bioinformatics* 2 (June 2022). DOI: 10.3389/fbinf.2022.914435. URL: https://doi.org/10.3389/fbinf.2022.914435
- Muhammad Muneeb et al. "SmartCon: A Blockchain-based Framework for Smart Contracts and Transaction Management". In: *IEEE Access* (2021), pp. 1–1. DOI: 10.1109/access.2021.3135562. URL: https://doi.org/10.1109/access.2021.3135562
- Muhammad Muneeb and Andreas Henschel. "Eye-color and Type-2 diabetes phenotype prediction from genotype data using deep learning methods". In: *BMC Bioinformatics* 22.1 (Apr. 2021). DOI: 10.1186/s12859-021-04077-9. URL: https://doi.org/10.1186/s12859-021-04077-9
- Zeeshan Raza et al. "Energy Efficient Multiprocessing Solo Mining Algorithms for Public Blockchain Systems". In: 2021 (Oct. 2021). Ed. by Jiwei Huang, pp. 1–13. DOI: 10.1155/2021/9996132. URL: https://doi.org/10.1155/2021/9996132
- Farah Shahid, Aneela Zameer, and Muhammad Muneeb. "A novel genetic LSTM model for wind power forecast". In: *Energy* 223 (May 2021), p. 120069. DOI: 10.1016/j.energy.2021.120069. URL: https://doi.org/10.1016/j.energy.2021.120069

- Zeeshan Raza and Muhammad Muneeb. "Tree-Based Blockchain Architecture for Supply Chain". In: *International Journal of Blockchains and Cryptocurrencies* 2.3 (2021), p. 1. DOI: 10.1504/ijbc.2021.10038698. URL: https://doi.org/10.1504/ijbc.2021.10038698
- Farah Shahid, Aneela Zameer, and Muhammad Muneeb. "Predictions for COVID-19 with deep learning models of LSTM, GRU and Bi-LSTM". in: *Chaos, Solitons & Fractals* 140 (Nov. 2020), p. 110212. DOI: 10.1016/j.chaos.2020.110212. URL: https://doi.org/10.1016/j.chaos.2020.110212
- Aneela Zameer et al. "Fractional-order particle swarm based multi-objective PWR core loading pattern optimization". In: *Annals of Nuclear Energy* 135 (Jan. 2020), p. 106982. DOI: 10.1016/j.anucene.2019.106982. URL: https://doi.org/10.1016/j.anucene.2019.106982
- Huma Pervez et al. "A Comparative Analysis of DAG-Based Blockchain Architectures". In: *2018 12th International Conference on Open Source Systems and Technologies (ICOSST)*. IEEE, Dec. 2018. DOI: 10.1109/icosst.2018.8632193. URL: https://doi.org/10.1109/icosst.2018.8632193

Publications (Under review)

- "Comparative analysis of machine learning and polygenic risk scores for cases/controls classification on a simulated data." Code and Documentation
- "Short-term Rain Prediction Using Climate Data and Cloud Presence Information." Code and Documentation
- "Five procedures for satellite images and radar data processing for climate-related prediction problems." Code and Documentation

Technical experience and Programming Languages

Keras (Machine learning), Linux shell, Plink, Samtools, Python, LaTeX, C/C++, Unity, R, Microsoft Word, Unity Game Development.

Academic Honors, Fellowships, Scholarships, Competitions

- Full fee waiver in High School (Merit-Based)
- Got 6th Position in Lahore Board (High School)
- Financial Aid in Bachelor's
- Gold medalist in Bachelor's
- Graduate Fellowship in Master's
- Third Place in 1st Kibo Robot Programming Challenge preliminary round conducted in UAE

Articles Reviewed

- Journal of Ambient Intelligence and Humanized Computing
- Alternative Therapies in Health and Medicine
- Computational and Structural Biotechnology Journal

- PLOS one

Thesis

- **Bachelor's Thesis:** Blockchain-based Smart Contract Management System for IOT devices
- **Master's Thesis:** Genotype Phenotype Predictions using Artificial Intelligence Algorithms

References

- **Ernesto Damiani**, Department of Electrical Engineering and Computer Science, Khalifa University of Science and Technology, Abu Dhabi, UAE email: ernesto.damiani@ku.ac.ae
- **Samuel F. Feng**, Department of Science and Engineering, Sorbonne University Abu Dhabi, Abu Dhabi, UAE email: samuel.feng@sorbonne.ae
- **Andreas Henschel**, Department of Electrical Engineering and Computer Science, Khalifa University of Science and Technology, Abu Dhabi, UAE email: andreas.henschel@ku.ac.ae