Curriculum Vitae

Muhammad Muneeb

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Websites: Researchgate, Google Scholar, Github
(971) 56 589 5574
Date of birth: 14 August 1997
Languages: English, Urdu, Punjabi
Hobbies: 3D Animation creation, Football, Poetry writing, Programming

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Education

August 2019— May 2021
Degree: Master of Science in Computer Science
Where: Khalifa University, Abu Dhabi, UAE
GPA: 3.87 of 4.0
Concentration in Artificial Intelligence

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

Current research work

June 2021— Present
Project: Transfer learning for genotype. data
Where: Khalifa University, Abu Dhabi, UAE
Advisor: Dr. Samuel F. Feng, Dr. Andreas Henschel
Contributions:

- **Project summary:** For some populations, genotype data is minimal for GWAS analysis. However, we can use the dataset of some other large populations to learn about the disease-causing SNPs and use that knowledge for genotype-phenotype prediction of small populations. We illustrated that transfer learning is applicable for genotype data and genotype-phenotype prediction for a small population.

June 2021— Present
Project: Machine learning vs PRS.
Where: Khalifa University, Abu Dhabi, UAE
Advisor: Dr. Samuel F. Feng, Dr. Andreas Henschel
Contributions:

- **Project summary:** We believe there are some phenotypes for which Machine learning can outperform Polygenic risk scores for case/control classification. So for that, we are working on the UKBioBank dataset to compare the AUC of LDpred-2 with machine learning for case/control classification of phenotypes like breast cancer, type-2 diabetes, etc.

Employment

June 2021— Present	**Position:** Research Associate **Where:** Department of Mathematics, KU (Dr. Samuel F. Feng) **Task:** Develop machine learning pipelines for case/control classification using genotype data.
August 2019— May 2021	**Position:** Teaching Assistant/Lab Assistant **Where:** Department of Electrical Engineering And Computer Science, KU **Course:** Object Oriented Programming **Task:** Conducting/Grading Lab sessions, Quizzes, and Revision sessions.
May 2019— August 2019	**Position:** Freelancing **Where:** Fiverr **Task:** Game development, Automation, and Programming.
January 2019— April 2019	**Position:** Research Assistant **Where:** Dr. Aneela Zameer (PIEAS) **Task:** PWR reactor core loading pattern optimization using particle swarm optimization.
September 2018— December 2018	**Position:** Research Assistant **Where:** Dr. Shahzad Ahmad Qureshi (PIEAS) **Task:** Worked on Separation and Identification of Multiple speakers in a non-overlapping voice signal.
June 2017— August 2017	**Position:** Unity Game Developer **Where:** Environment Software House **Task:** Game design and logic implementation, 3D modeling, Programming

Publications

- 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
- 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
- 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 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. "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

- 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)

- "A deep learning pipeline for medical image classification on mobile phones, with Covid-19 as a use case"
- "Covid-19 Predictions using Sentiment Analysis of Corona Related Tweets"
- "Comparative analysis of machine learning and polygenic risk scores for cases/controls classification on a simulated data." Code and Documentation
- "Transfer learning approach for genotype-phenotype prediction using deep learning models."
- "Predicting and interpreting genes associated with phenotypes using Random Forest."
- "Method to optimize GPUs selection with consistent performance degradation for crypto mining: a knapsack application" Code and Documentation
- "LSTM input timestep optimization using simulated annealing for wind power prediction" Code and Documentation

Publications (In press)

- "Can we convert genotype sequences into images for cases/controls classification?." (Code and Documentation
- "A method to integrate speakers identification, speech recognition, and information retrieval algorithms for speaker-based audio retrieval."

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
- Temporary Member of ATHM Peer review Journal (Reviewed only one Article)

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

- **Samuel F. Feng**, Department of Mathematics, Khalifa University of Science and Technology, Abu Dhabi, UAE, email: samuel.feng@ku.ac.ae